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MINNESOTA MEDICINE

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society.

Volume XVII DECEMBER, 1934 Number 12

TREATMENT OF CARCINOMA OF THE BREAST*

Combined Surgical And Irradiation Treatment

ARNOLD SCHWYZER, M.D.

St. Paul, Minn.

IN trying to evaluate properly the results obtained by either surgery or irradiation alone, and then again by the combined surgical and ray treatment, we encounter many difficulties. Some of the most prominent surgeons ten years ago declared that the statistical survey of their operative cases showed no improvement by the addition of postoperative irradiation. That this attitude was not correct is generally conceded today, when very competent observers report cases apparently cured by irradiation alone. The danger for progress lies to some extent in the too great specialization in modern medicine. Unless there is the closest coöperation between surgeon and radiologist each one is prone to underrate what the other can accomplish.

In a well localized malignant lump of the breast which has developed recently the rather universally accepted judgment is in favor of surgical treatment. This is agreed to even by the ardent exponents of the irradiation treatment. In addition to the good surgical results in these cases the psychic welfare of the patient is best served by this procedure.

Speaking now of the surgical results, they are best secured even in these apparently simple cases by an extensive removal of the breast with the underlying muscles, and a cleaning out of the axilla. Portmann found about 85 per cent of all the carcinomas of the breast to have axillary invasion. We can, therefore, never be sure that these lymphatics are not involved. This is particularly the case if the disease has developed slowly, and has, therefore, existed for quite a number of months. Though anticipating somewhat, let me say that I seem to differ from some modern writers by favoring even in these simpler cases routine pre- and postoperative irradiation.

When the disease is farther advanced the outlook becomes of course proportionately less assuring, and the extent of the operation, particularly the extent of removal of the skin, must be increased. All the many apparently pretty methods of incision which are always done with an eye to the closure of the wound, are very liable to sacrifice just a little of the main purpose of the operation for this minor and more negligible gain. The first recurrences occur mostly in the skin of the area of the operation. Too much attention to retain enough skin for closure of the wound is, therefore, meddlesome surgery. This is particularly so because skin transplantation is invariably successful. The removal of the lower three-fourths of the major pectoral and the excision of the minor pectoral are necessary for a satisfactory access to the important axillary and subclavian lymphatic net. It is somewhat dangerous to say (and might perhaps do harm if not emphatically reserved for exceptional cases) that in a very early condition one may *under circumstances* consent to leave more of the muscular structures, remembering that it is the fascial coverings over and under the muscles which harbor the endangered lymphatics. Including some superficial muscle fibers these fasciæ are then removed as extensively as possible together with the contents of the axilla. In some old person, say over seventy-two years, one may feel like compromising somewhat in this

*Read at the annual meeting of the Minnesota State Medical Association, Duluth, July 17, 1934.

way, but it is astonishing how well the operation is tolerated even by these people.

Very young persons, also occasionally older ones, with fulminating growths are probably best not operated upon, but simply rayed. Not long ago I let myself be induced to try operation in such a case, a girl of nineteen years with a polymorphous growth, and I feel that notwithstanding energetic pre- and post-operative irradiation (much more than we use routinely) our procedure did absolutely no good except for a mental effect on the patient by blurring the inevitability of the fatal outcome. The parents in this case were fully informed, but wanted the impossible tried even if only for the meagre psychic benefit. In these cases it is best, if operation is desirable, to simply remove the breast—leaving the axilla alone—after using large doses of radium or x-ray, much larger than in other cases, and to follow with irradiation as soon as possible. Energetic preoperative raying would seem to be of most value in these cases. Patients with cancer en cuirasse are best not operated upon but should be irradiated only.

I refrain from using the very limited time allotted in describing the surgical procedures any further, as they are to be found in any textbook. However, the use of the radio knife merits emphasis.

We must try to have a mental picture of what goes on invisibly at the time of operation. Some time before the Great War, Peterson and Colmers of Czerny's clinic in Heidelberg published their microscopic findings in autopsies after operations for carcinoma of the rectum. These investigations were of greatest interest to me. The authors discovered that in most instances there were monocellular carcinomatous emboli in the lungs in considerable numbers. Now, it is well known that carcinoma of the rectum causes exceedingly rarely and at best only at a very late date clinically recognizable pulmonary metastases. Peterson and Colmers came therefore to the conclusion that in carcinoma many more cells are washed into the general system than there are macroscopic metastases found. It followed *per se* that innumerable single cell emboli must be rendered harmless, particularly as long as the organism is not overwhelmed by the incessant influx. The fact that carcinoma of the breast (like some other kinds) has a great predilection for bone metastases and particularly for certain of the bones, tells us that seeds, promiscuously sown into the tissues, fall on barren soil in many part of the body. And with this we come to the discussion of the value of irradiation.

I may be wrong in my attitude, but to make this talk of any value at all, rather than summing up what has been written by others, I should like to give you my personal views even at the risk of appearing presumptive. I practiced preoperative irradiation before I read anywhere about it. I calculated that damaged cancers cells, seeded in during the operation, would thus easier be taken care of by the tissues. It really appears even more logical than postoperative irradiation. The autopsy findings mentioned created a different attitude for me from that taken by apparently most radiologists who are anxious to *destroy* as much as possible the cancer cells by preoperative irradiation, and therefore ask for six to eight weeks time to effect it. We made preoperative irradiation a regulation procedure some time before 1910. In 1920 I advocated preoperative irradiation in a discussion at a meeting of the Western Surgical Society, but received no support. This preparatory treatment was continued though Perthes had compared his postoperatively irradiated cases with his untreated ones and saw no benefit from the procedure. Others, especially later on, came, however, to different views.

In comparing results statistically several factors cause difficulty inasmuch as the character of the cases is an item which only very elaborate statements of all details would clear, and at that only in an incomplete measure. We all know that we may have a good run of favorable cases and then again the opposite. However, a single instance may at times bring much light. Let me mention a case which greatly influenced my attitude.

A woman, fifty-three years old, came to our office on April 4, 1902. She had a scirrhous carcinoma of the breast. A Halsted operation was performed, which method I had begun to do by that time. On cleaning out the axilla, which contained several carcinomatous nodes, an uppermost gland, a whitish hard carcinomatous nodule the size of a small French pea, was found situated in the very angle between the clavicle and first rib. A poor prognosis had to be given to husband and son. To mitigate the visible shock and despair I urged right then an energeticially persistent x-ray treatment in order to stem the progress of the disease as much as possible. After the wound had healed this patient received at first weekly, then month-

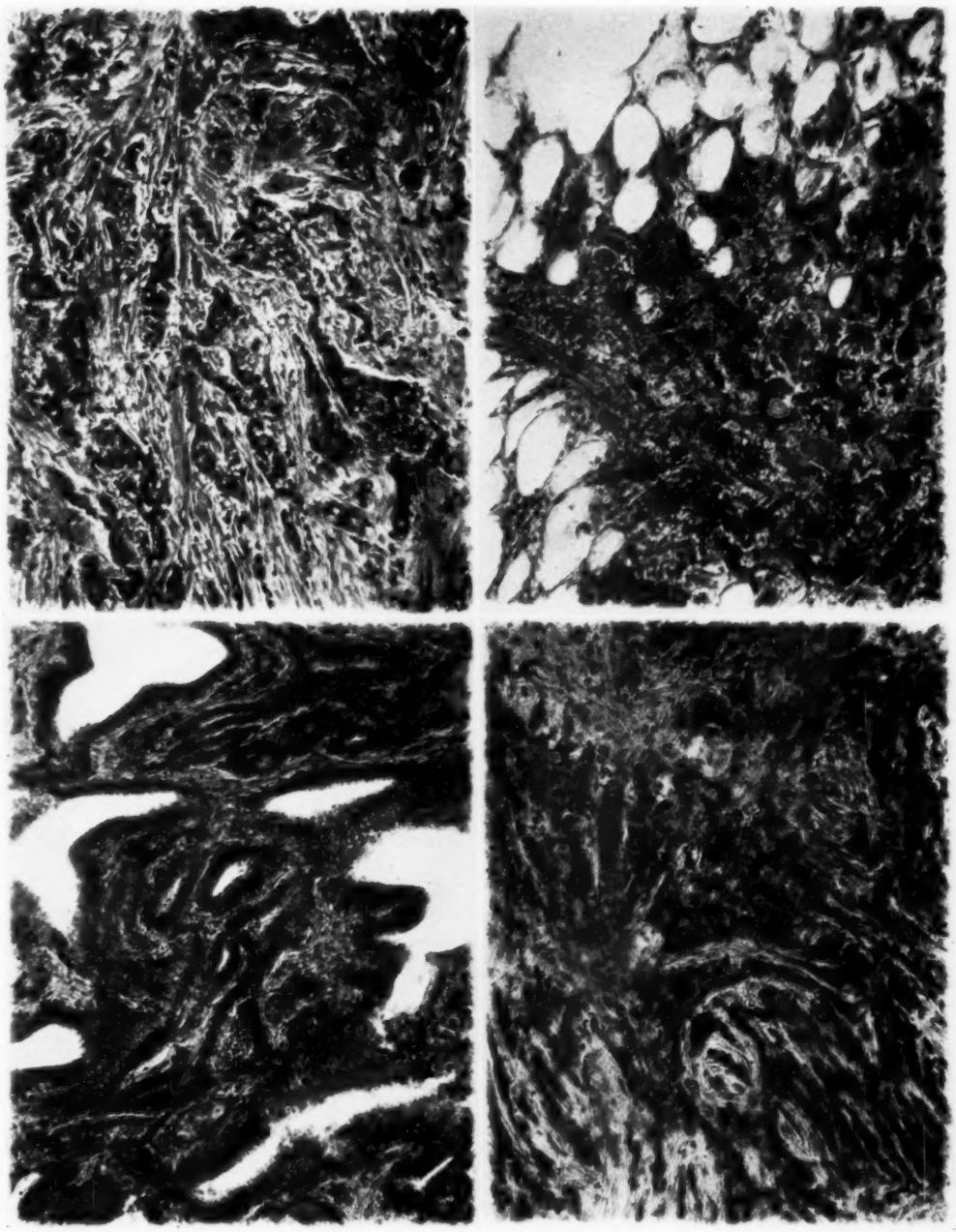

Fig. 1 (*upper left*). Mrs. Wil. Operation February, 1926. This case is shown because of patient's age, *thirty-one years.* Scirrhous carcinoma; no axillary glands. Preoperative and postoperative irradiation. She still gets x-ray twice a year, though there are no signs of recurrence.

Fig. 2 (*upper right*). Same case as Figure 1. Infiltration of the carcinoma into fatty tissue.

Fig. 3 (*lower left*). Mrs. Chr., aged sixty-nine. Adenocarcinoma. Operation December, 1923. Well today at age of eighty-five.

Fig. 4 (*lower right*). Miss Bre., aged forty-three. Scirrhous carcinoma. Operation September, 1922. Well today.

ly, irradiations which amounted to something between a sixth and an eighth of an erythema dose. The dosage in those days was measured with the Sabouraud tablets and was not as exact as you can do today, but when you gave these moderate treatments at monthly intervals, you ran no real risk. The condition of the skin and the disappearanec of the axillary hair were reasonably safe guides. Inasmuch as every additional month was considered by the family and by myself as a gift, the irradiation was continued faithfully. For two years our patient received a treatment once a month; during the next two years she had one every second month, though in October, 1903, one and a half years after the operation, the note was made that there was no trace of any recurrence to be made out. Finally the intervals were stretched to three and four months during the fifth and sixth years. No recurrence having shown up at the end of six years the treatments were discontinued. The last treatment was given in January, 1908. So far this case does not tell you very much more than that it may have been simply a lucky instance as we see them often. Even if I tell you that she stayed well for twenty-two years it will perhaps not impress you much. But now comes the feature which makes me speak of this case as one which proves the effect of irradiation in a picturesque way. For twenty-two years this woman had no signs of any recurrence and then there started *numerous* little skin nodes *simultaneously* in the area of the operative field. They increased in size and metastases showed up in different part of the body. She died from generalized carcinomatosis within a year, twenty-three years after her operation, at the age of seventy-six.

Carcinoma starts most always unicentrically and spreads from this focus. Very rarely you see a bifocal start. In our case there were several dozens of carcinoma nodes developing at the same time. They must, therefore, have been secondary seedlings planted at the time of operation or before. They were held in check by the long continued roentgenization, continued for six years. At the joint session of the German surgical and the German roentgenologic societies in 1931, the outstanding result of the meeting was that the severe massive doses which have been generally employed were declared not to yield results comparable with milder treatment continued over a long period.

You might ask if further prolonged irradiation in the mentioned case could not have still further delayed recurrence or even caused a definite cure. I recently saw a patient whom we now have given irradiation in the mentioned manner for ten years, and another for nearly nine. The last few years these two patients received not more than two treatments per year. We intend to continue with treatments every six months up to twelve years after operation. We have never seen fibrosis of the lungs, or any unfavorable consequences, from these prolonged, but, in the eyes of many roentgenologists, unduly small, doses.

Five years ago a woman was operated upon for an advanced carcinoma of the right breast. Seven months later she came to our office. On *that* side of the chest a great number of nodes had appeared under the skin, some the size of lima beans. Her surgeon, a very capable man, had given her up. She was then given irradiation as we do in our cases. The nodes stopped their rapid growth and gradually receded. They practically disappeared in the first affected area near the operative field. New nodes appeared below the breast region and as far back as the posterior axillary line. We continued with the mild doses, changing the areas as the new situation required. Her condition was reasonably good for four years, when the left breast became involved. During our vacation she then received over her right side an apparently strong (at least a stronger) treatment by a most expert radiologist. She became quite sick and weak. When she came back to us two months later her whole right side had become crusty. Last fall we removed the left breast and started again with weak treatments. But the right side of the chest secreted much, large crusts formed and when we had to hold off this spring from further raying, other nodes in the periphery grew. This is a case of a patient living five years after having been given up by her surgeon, who has an up-to-date radiologic equipment. I am inclined to think that if she had not had a strong intervening x-ray dose it would have been better.

As to preoperative irradiation, we give for three days, mostly directly preceding the operation, a daily treatment, in all about half an erythema dose of medium hard rays, unless large glands indicate more. We have not changed the procedure since the beginning. We estimate that the carcinoma cells which may be liberated at the time of operation have been—you might say—stunned. Such moderate raying does not interfere in the least with the wound healing. But if Peterson and Colmers' observations are correct, even a moderate damage to the cancer cells would render them easier disposed of by the tissues. The so-called stimulating effect of small doses, of which much was written in earlier days, always looked to me more like the wriggling of the worm that is hurt. After all, only experience can give the answer.

Take a patient who, before you were called, had some very irrational treatment; for instance, rubbing and squeezing by massage. In such a case cancer cells will be forced into the lymphatics and spread as far as this mischievous proce-

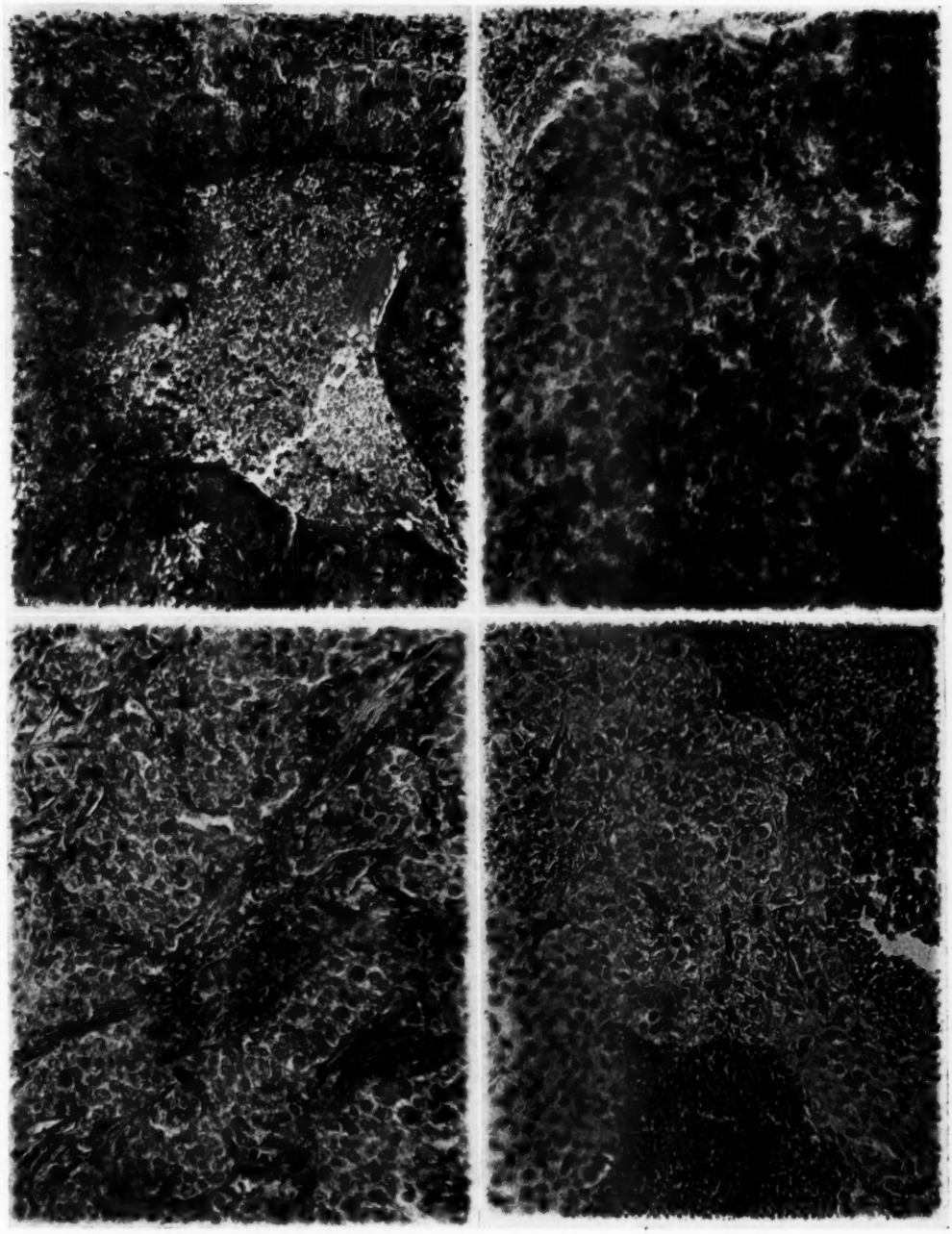

Fig. 5 (*upper left*). Mrs. Zil., aged fifty-seven. Duct carcinoma. Operation April, 1922. Well today.

Fig. 6 (*upper right*). Mrs. Gun., aged fifty-four. Borderline adenocarcinoma. Operation November, 1918. Well today. Had no x-ray.

Fig. 7 (*lower left*). Mrs. Cla. Medullary carcinoma. Operation October, 1913. Died of diabetes in March, 1934. No recurrence.

Fig. 8 (*lower right*). Same case as Figure 7. Metastasis in lymph node.

dure can get them to travel. Operation, alone and unassisted, then encounters a treacherous proposition. Here we sorely need the help of the rays. In February, 1910, a woman of thirty-one years came to us with a carcinoma of the breast, which on later microscopic examination

Fig. 9. Mrs. Map. Scirrhus. Operation September, 1912. Well today.

proved to be a scirrhus. In some areas there was an exuberant growth of the carcinoma solidum type. The patient had been massaged by an osteopath for a month and a half. The initial thickening had been noticed by the patient nine months previously, but grew slowly. A three day preoperative and persistently prolonged postoperative treatment by irradiation must have been an important factor in explaining that this woman is well today, after twenty-four years (Fig. 10).

Time does not allow me to go more into details of our subject beyond a few aphoristic statements.

1. Surgery, even in well localized mammary carcinoma, should be radical, obeying Halsted's teaching. Only exceptionally and for serious reasons may we be allowed to deviate somewhat from this principle.

2. The radio knife is of great advantage in sealing the wound, rendering it less ready for implantation.

3. The great danger of implanting liberated carcinoma cells during the operation is to be kept in mind constantly. The breast itself, after it is partly freed and its lymphatics are widely opened, is therefore to be considered as a possible source of inoculation into the wound. Gauze protection and gentleness in manipulation are thus important. Undoubtedly the brutal burning methods have a real advantage in this respect.

4. In far advanced conditions the excision of foul smelling ulcers by cautery or otherwise, followed or not by Thiersch transplantation, may become desirable.

5. When unbearable pain persists in recurrence after operation and the arm is greatly swollen and useless I have seen in one case great relief from an interscapular exarticulation of the arm, as advised by Carl Beck. The patient was very grateful.

6. Preoperative irradiation confined to three days appeared to us of great benefit. (It is quite possible that our usual dose should be increased to get the best results.) As this involves no loss of valuable time, it should be more readily consented to by many surgeons who would object to a delay of eight weeks, as some modern radiologists demand for preoperative treatment. Besides, such loss of time and the mental strain on the patient with the operation constantly before the eyes, is not to be underrated. It would probably be too bold to state that our results are as good as after more energetic preoperative irradiation, but for myself I am convinced of the value and desirability of moderate doses. When we use radium, fifty or more mgrs. over a wooden block 3 cm. thick are applied to different fields, to the amount of from 1,200 to 2,000 milligram hours as the case may require. This, with a day or two of rest before the operation, does not disturb the patient.

7. Postoperative irradiation, moderate in dosage but continued over a long period, in many cases if possible even over a *very long* period, seems to be of greatest value.

8. The dose of a single postoperative treatment, as we are giving it of late and as we estimate we have always given approximately, ranges between 60 and 80 roentgens after two to four stronger initial doses of about 130 "r." Eighty

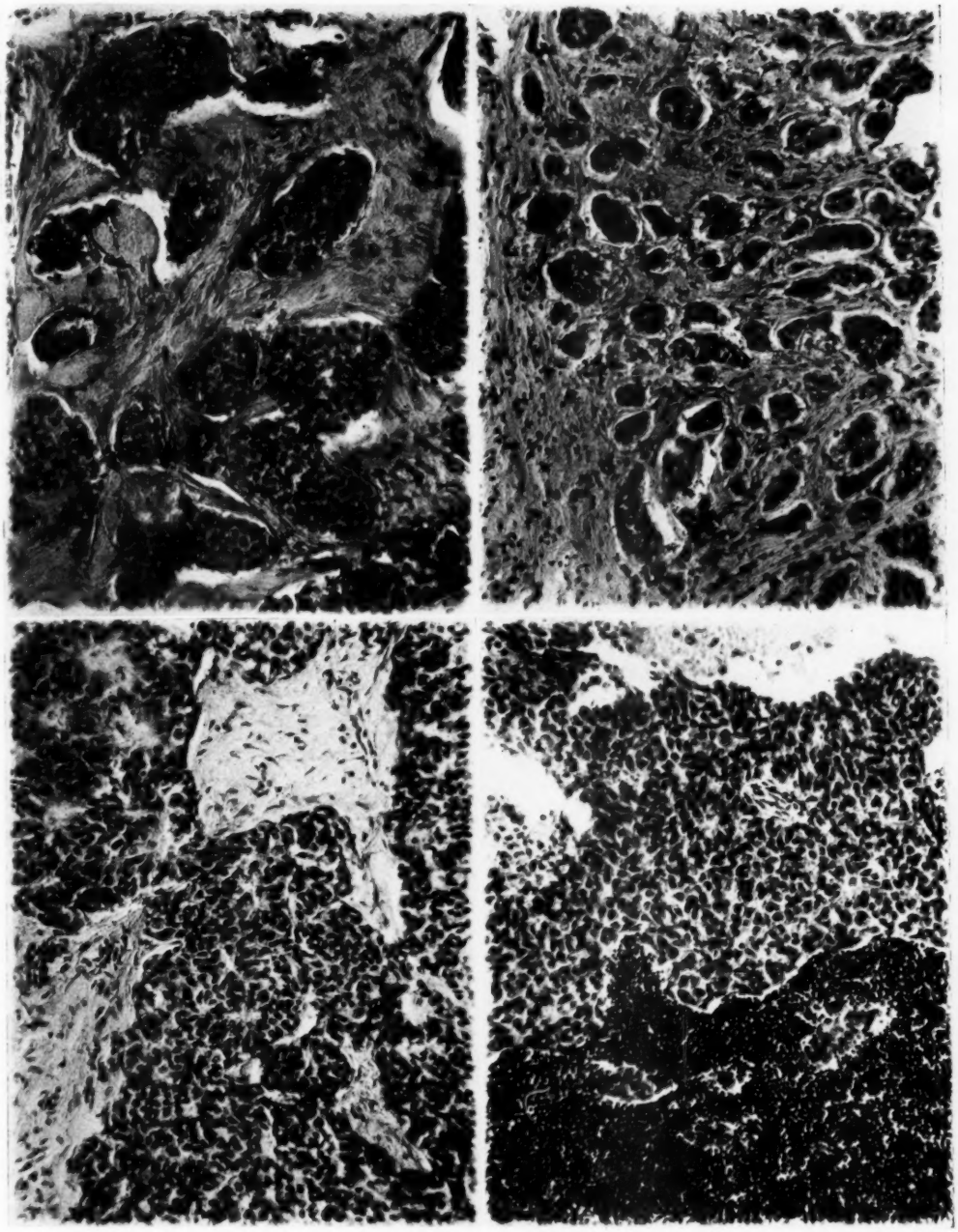

Fig. 10 (*upper left*). Mrs. Pec. Carcinoma solidum on soil of cystic disease. Exuberant growth in areas. Operation February, 1910. Well today. Patient was only thirty-one years old at time of operation.

Fig. 11 (*upper right*). Mrs. War., aged sixty-four. Scirrhous carcinoma. Operation October, 1908. Died of old age (eighty-nine years) in July, 1932. No signs of recurrence.

Fig. 12 (*lower left*). Mrs. Ack., aged thirty. Carcinoma simplex with metastases. Operation April, 1908. Well after twenty-six years and three months.

Fig. 13 (*lower right*). Same case as Figure 12. Metastasis in lymph node.

"r" are about one-tenth of an erythema dose. The first three doses are usually given at one-week intervals, then the next two or three doses at intervals of two weeks. After this the patient receives one treatment a month for two years, then for the next two years, if there is no particular reason to give more, one every second month, and if the patient lives, and we can make them see the value of perseverance, they get three or four treatments during the fifth and sixth years. After this, in cases where we had made originally a poor prognosis, we like to give a treatment twice a year for several years more. This is, of course, not given as a formula for others, but simply as a statement of our procedure which seemed best to us from our own observations.

9. Castration, as advised by some earlier authors, has apparently no marked effect on the course of the disease.

10. Though we operate on practically every case which is not too unreasonably far advanced I feel that irradiation will gradually come more into its rights and is at present a most important help to surgery, as well pre- as postoperatively. I should not feel that I was doing my duty toward the patient if I did not insistently explain to her the importance of irradiation and make sure of her seeing the situation in the proper light.

Personal Records

Our experience with diseases of the breast comprises a little over 400 operations. In 231 of these the diagnosis of malignancy was made. In 1902 our histories began to record systematic and prolonged postoperative irradiation. For the period therefore from 1902 to ten years ago (May, 1924) I examined my material to get as much as possible at a picture of my real end results. Even the ten year test, though rather rigorous, yields of course not an absolutely definite final picture.

While there were no operative deaths, a number of cases had to be disregarded on account of insufficient data, especially the microscopic findings. Four such cases, living and well today, had thus to be eliminated—of course to our regret.

The microscopic slides which we had were examined recently by Dr. Arthur Pederson, head of the pathological department of St. Joseph's hospital, as well as by me. Only those cases were considered where our diagnoses concurred, and in addition were confirmed by Professor E. T. Bell of the University of Minnesota. Thus, in three other cases, also living and well today, there was a difference of opinion as to the malignancy. They too had to be left out.

On the other hand, whether our notes were complete or not, almost all the bad results could be traced by an investigation of the death certificates. The Bureau of Vital Statistics of the State of Minnesota helped us very efficiently in tracing the dates of death of many of the patients and I feel it an obligation to mention this valuable and most courteous assistance.

There remained for the period from 1902 up to ten years ago sixty-four patients for our consideration. Some of these had more than one operation. Sixteen of them are living and well today, six died without recurrence, and forty-two with recurrence.

The details of the sixteen who are living and well today are briefly presented in the accompanying table (Table I).

Besides these sixteen living patients there were six who died without a recurrence. Details are presented in Table II.

Of the remaining forty-two patients who died sooner or later of their carcinoma eleven died during the first year, six during the second year, three during the third year, two during the fourth year, eight during the fifth year, four during the six year, one during the eighth year, three during the ninth, twelfth and fourteenth years, and one after twenty-three years.

Those who died within a year after the operation were, of course, mostly too far advanced and the operation was often done only for temporary comfort with no expectation of a cure, such as with extensive ulceration, etc. At other times an unexpected metastasis in the liver or spine soon caused symptoms. Some cases always remain that neither knife nor ray will cure.

Disregarding the patients who died free from recurrence less than ten years after operation there remained sixty-one cases to be grouped. Sixteen of these patients are living and well today. Three died free from recurrence more than ten years after operation, which raises the percentage of ten year cures to 31 per cent. Adding three more patients who died more than ten years after operation (but with recurrence) we have

TABLE I

Date	Name	Age	Period Free Yrs.	Mo.	Annotations
Apr. 1908	Ack.	30	26	3	Had 30 x-ray treatments. Carcinoma solidum (Fig. 12). Lymph node metastases.
Feb. 1910	Pec.	31	24	5	Persistent x-ray treatment. Scirrhous carcinoma, partly with exuberant growth (Fig. 10).
Dec. 1911	Kre.	37	22	7	Adenocarcinoma.
Sept. 1912	Map.		21	10	Scirrhus.
May 1918	Car.	48	16	2	Preoperative and postoperative x-ray.
Nov. 1918	Gun.	54	15	8	Had no x-ray treatment. Papillomatous cyst, malignant. Borderline adenocarcinoma.
Jan. 1919	Wil.	45	15	6	Had no x-ray treatment.
Apr. 1919	Sym.	65	15	3	Cauliflower cyst, adherent to skin. Carcinoma. Preoperative x-ray and 4,500 mg. hrs. Radium right after operation.
Nov. 1919	Dub.	44	14	8	In Nov., 1933, operation for carcinoma of other breast.
Oct. 1920	Gre.		13	9	Preoperative and postoperative x-ray.
Oct. 1920	Hil.		13	9	
Apr. 1922	Zil.	57	12	3	Enlarged axillary glands. Preoperative x-ray. Postoperative x-ray irregularly, last treatment Oct., 1927.
Nov. 1922	Bre.	43	11	8	Carcinoma solidum, partly scirrhous. Had preoperative x-ray, and is still getting x-ray treatments.
Dec. 1923	Chr.	69	10	7	Adenocarcinoma. Mass size of plum, partly cystic. Apparently no postoperative x-ray.
Jan. 1924	Woo.	37	10	6	Had childbirth in Dec., 1924. Radium in 1925. Partly adenocarcinoma, partly scirrhous. Axilla free.
Feb. 1924	Mun.	64	10	5	Thiersch grafts needed. Still gets x-ray treatment twice a year. In 1926 thyroidectomy for large colloid goiter.

TABLE II

Date	Age	Name	Date of death	Cause of death	Survived Yrs.	Mo.	Annotations
Oct. 1908	64	War.	July 1932	Old age (88 yrs.)	23	9	Had postoperative persistent x-ray treatment. At time of operation tumor firmly attached to skin. Supraclavic glands removed, 1910, negative for carcinoma.
Oct. 1913		Cla.	Mar. 1934	Diabetes	20	5	Preoperative and postoperative x-ray. At time of operation growth attached to pectoral muscle.
Jan. 1918	67	Dit.	Apr. 1933	Arteriosclerosis (82 yrs.)	15	3	Preoperative and postoperative x-ray treatment.
Feb. 1918	54	Mar.	Jan. 1925	Pernicious anemia	6	11	Preoperative and postoperative x-ray treatment.
June 1921	87	Rem.	May 1924	Old age (90 yrs.) Felt well for over 2 years after operation	2	11	Patient, mother of a physician, wanted operation, which was done with local anesthesia.
Mar. 1919	46	Sch.	Mar. 1920	Acute nephritis	1		

twenty-two who lived longer than ten years (36 per cent). Sixty-four per cent lived more than four years after operation.

My material is too small to prove anything definitely, but the percentage of long lasting cures speaks for the value of persistent irradiation in combination with surgery.

I feel it a pleasant duty to express here the sincere thanks to my former associate, Dr. F. C. Schuldt, not only for the excellent preservation which these old sections show, but particularly that they could still be found.

OVARIAN TUMORS ARISING FROM EMBRYONIC RESTS*

SELMA C. MUELLER, M.D.
Duluth, Minnesota

TUMORS arising from embryonic cells may consist of practically any type of body tissues. The ovary is a particularly fertile field for various bizarre types of tumors, and it is the more unusual ones which have been grouped together for discussion here. Some of these tumors exert a definite hormonic influence upon the patients carrying them; it is the result of the action of their various hormones which makes these tumors especially interesting from the physiologic and clinical standpoints.

Embryology

A short review of the development of the urogenital tubules and sex glands will present the facts upon which the various theories of origin of ovarian neoplasms are based.

In the early embryo, three successive sets of urogenital tubules develop: (1) the pronephros, which does not persist, but whose ducts partially form the ducts of the second set; (2) the mesonephros (2-3 mm. embryo) which forms the Wolffian body with its ducts and a primitive kidney; (3) the metanephros, which is formed partly from the mesonephros, and forms the permanent kidney.

The second set of tubules just mentioned, the mesonephros, is the one most intimately concerned with the genital apparatus. It forms, in its caudal or genital portion, the Wolffian ducts, which persist and function in the male as the seminal vesicles, efferent ductules, etc., but in the female only the rudimentary epoöphoron and the rete ovarii remain in the adult.

The genital ridge is a mass of mesenchymal cells which forms medial to the above sets of tubules and eventually gives rise to the sex gland, both in the male and female. The mass of cells in the genital ridge migrates down to the pelvis and comes into close contact with the Wolffian body. The Wolffian body furnishes the connective tissue for the ovary while the genital ridge cells form a surface layer over it. Winiwarter has shown that three successive proliferations of the germinal epithelium occur. First, the medullary cords are formed by a proliferation of the germinal epithelium, which penetrates down into the mass of cells. These cords degenerate in the female but form the seminiferous tubules in the male. Second, there are the Pflueger's cords and tubules, which form primordial follicles without ovules and then degenerate after birth. Masses of cells which are to become Graffian follicles with ova constitute the third. Recent investigators deny that these tubules ever actually communicate with the Wolffian ducts in the human (in some mammals they do communicate). The theory of origin of ovarian cysts from Wolffian duct rests is based upon the latter assumption.

Other cells of germinal ridge origin form the interstitial cells of the ovary, as was shown by Lane-Claypon. Connective tissue cells derived from the Wolffian body surround these cell masses and cut them off from one another and from the surface epithelium. Opinion seems to be unanimous that ova, in the human, are all formed in fetal and perhaps the first two years of post-natal life. In some mammals oögenesis occurs throughout life. Thus, all epithelial elements of the ovary are derived from the germinal epithelium and there occurs great proliferative and degenerative activity throughout fetal life.

Dermoids or Teratomas

The term "dermoid" is being gradually discarded in favor of better terms such as "teratoma" and "embryoma." All these terms refer to tumors usually containing cells derived from all three germ layers, but occasionally having only one germ layer represented. There has been much speculation centered about the origin of these interesting tumors. The three most important theories of origin of ovarian teratomas are as follows:

1. The earliest theory was that they were

*Presented before the meeting of the St. Louis County Medical Society, June 14, 1934.

"mixed tumors" arising from fetal rests of already differentiated cells in the ovary.

2. The theory which held sway for many years and is still retained by some, is the blastomere theory of Marchand-Bonnet. They believe that a blastomere became displaced in early fetal life and later developed, having potentialities for all three germ layer cells. This theory best explains dermoids in other parts of the body, since the blastomere might be displaced to any part of the developing fetus.

3. More recently, the parthenogenetic theory, which was first formulated by Wilms, has been modified and is being given wide support. This theory holds that a primitive sex cell, perhaps a cell from a medullary cord or Pflueger's cord, is retained and begins to divide without being fertilized. The tumor could potentially contain all types of tissue. In this connection, Loeb has shown that parthenogensis occurs in guinea pig ovaries. Other experimenters have produced parthenogentic development of ova in lower forms, such as the sea urchin. A point which this theory does not explain is the fact that sex cells—ova and spermatozoa—or their predecessors, are never found in teratomas. Heart and liver tissue, also, have never been found in teratomas.

Whatever their derivation, the dermoids or teratomas are very interesting. The usual forms, containing hair, teeth, glands, nerve tissue, etc., are fairly common (4 to 5 per cent of all ovarian tumors) and I will not discuss them further. Several unusual types of teratomas, however, are interesting. These are tumors containing primarily one type of tissue, which presumably develops at the expense of all others.

Important among these are the so-called ovarian struma, tumors consisting wholly, or practically so, of thyroid tissue. I have reported a series of six such cases. Two of these occurred in women who had definite hyperthyroidism. The others had questionable hyperthyroidism as evidenced by rapid pulse rate, nervousness, etc., but the basal metabolic rates were not taken. The iodine content of three of these tumors was determined and found to be more than that which normally occurs in ovarian tissue, as high as .105 per cent. Recently, Plaut of New York, has investigated a group of these tumors biologically by feeding the tumor tissue to tadpoles. In one or two instances he observed increased rate of growth. Most of the tumors which I examined showed evidences of hyperplasia of the thyroid epithelium. One of these tumors also contained a mass of polygonal cells which were very suggestive of parathyroid tissue. Another interesting teratoma is one reported by Saxer. He found an ovary containing a tooth without other teratomatous structures.

Pseudomucinous Cystadenomas

Ribbert first advanced the theory that pseudomucinous cystadenomas are of teratomatous origin, with cells of intestinal anlage being the only ones to develop. This brings a very large group of tumors into the class of teratomas. In favor of his view is the fact that pseudomucinous cystadenomas have an epithelium strikingly similar to that of the intestine. Second, they occur frequently in association with the usual type of dermoid or teratoma. Third, the origin of pseudomucinous cystadenomas is not from the invaginations of the germinal epithelium, as has been shown for serous cystadenomas.

Granulosa—Cell Tumors

These are the ovarian tumors most frequently mentioned in recent literature. Older writers, such as Pfannenstiehl, claimed that no tumor ever arose from follicle cells. More recently R. Meyer has expressed the opinion that they arise from preformed follicle epithelium. Gottschalk believes they arise from primordial follicle cells. Ujina is the only one I have found who believes they come from ripe follicle cells. It is unlikely that these tumors form from adult follicle cells because the life of follicular tissue is so entirely dependent upon the life of the ovum which it surrounds.

Meyer and others are now quite firmly convinced that they arise from embryonic rests of ovarian parenchyma, which are closely related to granulosa cells. The embryonic rests are very likely to be cells of the embryonic Pflueger's cords which have not degenerated as they ordinarily do and are stimulated to grow by some as yet unknown stimulus. Evidence in favor of this theory is derived from the following facts: (1) that proliferative changes in the follicles are never observed, even though we examine many ovaries with inflammatory changes and other proliferative changes; (2) that very small, early granulosa tumors, when found, have always been

located in the hilus of the ovary away from the cortex (Telinde); (3) that granulosa cell tumors occur much more frequently in women after the menopause. when follicles are atrophied, than during the active life of follicle cells. Occasionally they occur in children.

Clinically, these tumors cause what has been designated femininization, in contradistinction to other tumors which cause masculinization. They usually cause uterine hyperplasia with menorrhagia. Occasionally the endometrium has hypertrophied to the stage of a decidua. The breasts frequently hypertrophy, also. When these tumors occur in children they cause precocious puberty and sexual development. Removal of the tumor gives a complete loss of these unusual findings. They are not highly malignant.

Hormone production by these tumors has been investigated by various Germans (Plate, Dworzak, etc.). Follicular hormone is produced in large amounts. Schuschania presents the case of a 67 year old woman. Preoperatively, 326 mouse units of ovarian hormone were present in the urine. Eight days postoperatively 158 units were found, and sixty days postoperatively the hormone was entirely absent. Further studies along these lines should be carried on.

Microscopically, these tumors show various structures but there are usually follicle-like formations and cysts. The follicle-like cells may surround cysts, or occur in solid masses, or in cords. The masses of cells are always surrounded by dense connective tissue which forms a prominent part of the tumor. It has even been stated by some authors that ovarian sarcomas are really granulosa cell tumors because of the prominence of the connective tissue elements in these tumors.

Brenner has described "oöphoroma folliculare," which belongs to this group but is somewhat atypical.

Arrhenoblastoma

Recently, cases of ovarian tumor having a hormone effect which causes masculinization have been reported. At present twenty-six reports have appeared in the literature. No other ovarian tumor causes masculinization, so far as is known, except adrenal tumor.

Pick in 1905 first described such a tumor, which he called adenoma tubulare testiculare ovarii, and believed it arose from the testicular portion of an ovotestis. R. Meyer, who has seen the largest number of these tumors, believe they arise from original sexually bivalent cells of the early embryo; that is, they may be classed as teratomas since they arise from embryonic rests of the germinal ridge, which now develop toward the masculine side. This brings up the question of the interrelationship of sex characteristics of cells. In certain animals a type of hermaphrodite individual is known, called a "free-martin." This animal has the female type of external genitalia and male internal genital organs. The gonad, or sex cell, is primarily female, but a transition occurs from medullary cords into seminiferous tubules. This bisexuality has actually been observed. In experimental work, Brambell and Parks have shown that in irradiated ovaries of fetal and very young mice, the germinal epithelium proliferates and invaginates the ovary, forming quite typical medullary cords as well as spermatic tubules. Thus two types of sex reversal have been actually observed. Investigators of sex reversal have concluded that (1) the ovaries possess a certain instability which is never observed in the testes, and (2) the right ovary exhibits testicular transformation more often than the left.

Three types of the arrhenoblastoma have been observed by Meyer: (1) the typical well developed tubular tumors similar to that first described by Pick; (2) atypical forms with small atypical tubules and masses of cells; (3) an intermediate form between these two. It is interesting that the second atypical type of structure causes the most marked clinical symptoms of masculinization.

Clinically, these tumors occur most frequently in young adults (adrenal tumors causing masculinization being most apt to occur in children), but may occur at any age. They cause more or less marked degrees of masculinization. One of the early signs is deepening of the voice, then hirsutism, male type of body structure and gait, atrophy of the breasts and always amenorrhea.

After removal of the tumor, menses usually begin again, and cases of pregnancy carried to term have been reported. The voice regresses, hair growth gradually ceases, and the individual again attains a feminine habitus.

These tumors are not highly malignant. Therefore the opposite ovary should not be removed if the diagnosis can be made at operation, as the

function of the normal ovary brings back normal feminine traits. R. Meyer speculates as to whether a mixed tumor, containing both tubular (testicular) tissue and granulosa cell types could cause both masculinization and hypertrophy of endometrium, breasts, etc.

Disgerminoma or Seminoma

This type of tumor is mentioned because its structure resembles testicular structure. These tumors may be related to the arrhenoblastoma, but do not have the marked hormonal influence. They occur in both ovaries and testes and are more malignant. In the ovary they occur in children and young adults, but when affecting the testicle are found later in life. In women, the disgerminoma often causes atrophy of the external genitalia and uterus, while in men it may occur in cryptorchidism. These tumors are also thought to arise from cells which existed in the embryo before the stage of sex differentiation.

Parovarian Cysts

These should be mentioned in this discussion because they obviously arise from embryonic rests, the paroöphoronic tubules which are remains of the Wolffian ducts. Parovarian "dermoids" also occur but are very rare. However, some authors believe that all dermoids arise from the parovarium and secondarily involve the ovary. Parovarian cysts occur most frequently in young adult women. They have never been known to have any hormone content. Symptoms are absent unless the tumors attain sufficient size to cause pressure.

Microscopically, parovarian cysts are thin walled structures with a flat layer of cells lining the cavity. They are formed from dilatations of parovarian tubules, and are usually uniocular, with clear fluid contents.

FEDERAL EMERGENCY RELIEF*

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IN any consideration of our vast relief problem as it now presents itself, it is essential that we clearly define the viewpoints on which our discussion is based. I would view this problem with you on three separate fronts. The first of these is the front of the tax-paying citizen who looks at the relief problem with all the concern of one who seeks to know what the government is doing and why. Our second view is at the firing line of medical relief from the viewpoint of the physician in the field concerned with rendering an adequate medical service to his people. And then very briefly we shall step into the divisional office to look at the map on which are charted our health advances and defeats that we may know what methods of attack give promise of greatest success in the future.

Turning then to our first front, the viewpoint of the citizen tax-payer, what is the significance of all of these millions of dollars for relief?

The relief system of practically every state in the United States is based on the pauper laws of Queen Elizabeth's time and before. Relief is still variously described in the laws of your state and mine as being for the "blind, old, lame, decrepit, indigent, and the pauper." We have spoken of it in terms of alms, gifts, and charity. As citizens we must be frank to admit that everywhere we have had a collection of worse than poor, poor relief laws.

The period of economic pressure brought to us an entirely new group in dire need of help, a group that today comprises in excess of 95 per cent of all those who are receiving relief funds. The wage earners among these people have an ability to work that is their capital and that capital is unimpaired. They are ready to invest it and to earn their living and a living for those

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dependent upon them. They are not paupers although they are without the means to purchase the necessities of life because they find themselves without the ability to locate employment.

This tremendous influx of those who must be supported until they find work brought about the final breakdown in our archaic poor relief laws. We declared that these people should not starve, yet the communities found themselves unable to cope with this problem in social arithmetic and state after state turned to the federal government for help. In the early days of federal aid it was on the basis of loans. But when the extent of the problem became more clearly defined, we had the establishment of the Federal Emergency Relief Administration with its monthly allotments of millions of dollars to state after state in accordance with the financial and relief needs in those states.

The picture of relief changes in such a kaleidoscopic fashion that it is almost impossible even to talk in generalities. We speak of an emergency and the very designation of the relief administration is prefaced by that word emergency. A year ago, however, federal administrators commenced to lay their plans for a five or ten year program. Today they are ready to suggest that, so far as it is possible for them to see in the future, the federal relief administration, in one form or another, now has all the earmarks of permanency.

We are so accustomed to speak in terms of millions of dollars that it would be easy for us as citizens to forget the real unit of measurement. In relief the unit is the family in need and we find that when we get down to that unit, because there are so many of them, our sums that are so large in their totals represent but comparatively few dollars per month per family to cover the necessities of life—shelter, heat, food, clothing and medical care. Thus on the basis of a recent compilation it was shown that in Minnesota the amount available per family of four per month to cover all of these needs in the month of January, 1934, amounted to but $20.78, while in the United States as a whole during the same month the average relief cost per family was $16.77. These are small sums, indeed.

As a citizen, we thus see a front where the appropriations are vast but where the needs are so great that the amount available per month per family on relief is hardly sufficient to cover basic necessities of life.

Medical Service

Now let us shift our view to that sector of the front wherein physicians are individually administering to the health needs of their people. Long before we had a report of any foundation subsidized Committee on the Costs of Medical Care, organized medicine had repeatedly declared that if the people were directly concerned about the distribution of the costs of care then they must recognize that the first means of spreading the costs was to relieve the individual practicing physician of the burden of caring for the wholly indigent. We pointed out that just as the wholly indigent represented a community responsibility for his food, clothing, and shelter, so must he represent a community responsibility for that prime necessity of life, needed medical attention. If this were accomplished, then that charitable work that will always characterize the profession of medicine increasingly might be given to those who, under no few handicaps, are endeavoring to maintain an independent financial status in life.

It should be noted, however, that nowhere did medicine say that care of the poor was a federal responsibility. With the collapse of our community poor relief systems, federal funds of necessity had to enter into the relief picture and in such amounts that there came about that natural corollary of money distribution—control of distribution by the source of the fund. So did we see control by the federal government of the distribution of these vast sums allotted for relief purposes to the several states. We found the establishment of a social machine for the delivery of relief funds wherein the rules and administration were in the hands of people who, while the best available, frequently were little qualified by experience or training to know health needs or degree of adequacy with which those needs must be met.

The relief problem had become so large and involved such a high proportion of our population, however, that the physician, overwhelmed with a charitable burden which he could no longer carry and survive, welcomed the entry of federal funds into his picture, despite a keen apprehension over the future of government in medicine. The physician found that if he would

agree to a schedule of allowances that represented on the whole not much more than the cost of delivering the service, and if he would agree to abide by the rules of the relief administration, he could have some remuneration, however small, to assist him in caring, in office and home, for the medical needs of the tremendous numbers that had been forced on the relief rolls.

Despite the fact that the physician felt very keenly that the system of distribution was one based on a program of remote control not conducive to a proper health program, the physician too stood in dire financial need and frequently required this partial lifting of a burden that had grown far too heavy for him to carry alone.

Speaking in dangerous generalities I would say that when we view the sector of the physician in the field of relief we are impressed that the system works poorly when any of these features are to be found in the medical administration:

1. When there is a national plan that atttempts to lay down for Minnesota and Mississippi, Wisconsin and Wyoming, the exact procedures under which medical service is to be rendered or denied.
2. When the physician is encouraged to look upon joint federal and state relief funds as a source of pay for service rendered, for at the very best we can only say that we have been given schedules of allowances for just some of the service that we must give to the people.
3. When the social administrator has attempted to diagnose the medical needs of the patient.
4. When there is a lack of coöperation and understanding between organized medicine and the relief administrators.

The system works reasonably well as a partial relief system when all of the following features are present:

1. When the state relief department is given reasonable leeway in preparing a state program that will meet conditions peculiar to the state.
2. When the physician looks upon relief as an effort of the government to assist him as best it may in continuing his charitable service to cover a suddenly and tremendously enlarged load.
3. When there is a clear division of responsibility between the social administrator and the physician to the end that the physician dictates the medical needs of his patient and the administrator concerns himself as a social economist.
4. Where there is the closest working coöperation between the County Medical Society and the County Relief Administrators, and the State Medical Society and the State Relief Department. I cannot over-emphasize the importance of such coöperation. It needs to be obtained at all costs for upon that coöperation rests the future understanding and future modifications which will insure to those on relief rolls the best available service under the limitations that the government of budgetary necessity must impose.

The Third Sector

Finally, let us view federal emergency relief in its medical aspects to the end of answering for ourselves whether this is a system, the extension of which to so-called low income groups will promote either the delivery of medical service or the delivery of a more adequate medical service. We need not now turn to Europe to say what would happen in this country under such a system of compulsory health insurance. We have our own experience under the emergency plan which presumably was intended to insure the necessities of life for substantially one-sixth of the people in this nation. It has been in effect over a year and we should be in position to say now whether its effectiveness is limited to aiding physicians to care for the poor in a financial emergency, or whether this system gives promise of higher service to all people through its extension.

The physician who observes medical service under federal emergency relief is impressed with these points:

1. It does recognize the family physician-patient relationship that is so essential to adequate medical service. In large areas, however, this relationship does not exist in fact.
2. It places, however, a positive government approval upon what might well be exceedingly bad medicine when it offers to give the physician an allowance for an operation in the home, and pay for a nurse if that be necessary, but refuses to pay any concerned

if the operation be performed in the confines of a hospital. I say this is a positive government premium on what might well be exceedingly bad medicine. That it has not occurred in fact, as it has not, is to the very great credit of the profession itself and none to the government.

3. Medical service under this plan is chiefly concerned in keeping the patient alive and little concerned with keeping him well. Prevention of disease has played little or no part in the program. The emphasis is placed upon minimums of care rather than essentials of health.
4. Directors have been laymen largely unacquainted with any part of the real problem that physicians face daily, and yet all too frequently have considered themselves diagnosticians of the medical needs as well as the social needs of their charges to the very great detriment of any reasonably satisfactory medical service.
5. Directors everywhere have been responsible first to the government fiscal agencies and their rules. The budget has dictated the service for which allowances would be paid and not the needs of the patient as stated by the physician.
6. Physicians have not been paid for their services but have been given allowances in an effort to supplement their efforts in a time of crisis.

In a few minutes together we have looked at relief from the viewpoint of a citizen, from the viewpoint of the physician and now we have gone into the divisional office to see whether an extension of this program promises most for the health needs of other large groups of our population. This question we must answer in the negative.

In this entire situation we have had no demonstration of any breakdown in the institution of medicine as it has been built throughout these many, many years. Hospitals have had no bank holidays. Physicians have declared no strikes. It has been well said by Mr. Harry L. Hopkins, Federal Relief Administrator, that throughout the years 1930-1931-1932-1933 "medical care was given free in the first place by the doctors. The doctors held the bag, there is no question about it, from one end of the country to the other. The medical profession gave free medical care to the unemployed * * * and when the record of this depression is written it will show that if there ever was one man that gave things without any return in this unemployment crisis, it was the doctor, from one end of the country to the other. It is a grand story, the work the physicians did for the unemployed."

Now I assert that the doctor is continuing to give under the allowance plan. He will continue to give in the future and while he keenly appreciates the limited federal-state aid that is made available to him through this great emergency, at the same time he accumulates daily experience that impresses him more and more that in federal medicine we have no system which will promote the delivery of either an adequate or a scientific medical service for others of our people. The emergency has proved conclusively that all that has been said of the evils of a state system of medicine has not been over-stated. There may be those so blind to the great contributions of physicians in this national emergency that they will assert that the financial basis that has been established for medical allowances is one that may well carry over into a system of compulsory health insurance. If such persons exist they would betray not only an entire profession into future economic bondage, wilting the flower of scientific progress but, more important, would use their position as leaders to betray a trusting citizenry into a system of medical mediocrity.

Conclusion

I urge upon you the continuation of your great efforts as organized private practitioners to cooperate with the federal government in meeting the medical needs of a large relief group in our population who must depend entirely upon the government and you for that service. And at the same time I would counsel you to make your contribution in such clear and certain terms that the small allowances you receive never may be referred to as pay. For if you gave only such service as was paid for in just and reasonable amount, then indeed would our emergency system for the care of the poor be but a shocking system of poor man's medicine. That it will never be, despite the limits of federal aid, for medicine is a profession wherein the needs of the patient, rather than the relief rules and budget, dictates the service to be given. The code and goal of medicine is the welfare of those it serves and not a standardization of price.

CHOICE OF ANESTHETIC AGENTS AND METHODS AND A SUGGESTION TO FACILITATE BLOOD TRANSFUSION*

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THROUGHOUT the history of modern anesthesia, new agents and new methods for their administration have been recommended until, at the present time, there is a considerable accumulation of agents and methods at the disposal of the anesthetist. Several new agents and methods are being used at this time with considerable satisfaction. From time to time it is well to consider the newly suggested agents and methods in relation to those that are older. A brief review will be attempted.

General Anesthesia by Volatile Agents

Ether, or diethyl oxide, the most reliable and most generally used of anesthetic agents, has enjoyed well-earned acceptance and widespread use throughout the last eighty-seven years. Chloroform was the first of the general anesthetic agents introduced to supplant ether, and although it is still used, especially in obstetrics, in many parts of the world it has fallen into disfavor because of its immediate and remote untoward effects.

The drug which has been introduced most recently to supplant diethyl ether is divinyl oxide, but as yet its use has been limited to a very few hospitals. Ravdin[2] reported on his results with it, at the University of Pennsylvania, at the meeting of the American Medical Association in Milwaukee in June, 1933. It is said that the agent can be used to produce anesthesia quickly, that it causes good relaxation, that it allows the patient to recover quickly, and that it is generally satisfactory when it is properly administered. It is more potent than diethyl ether and is given in small quantities by either the open drop method or by the gas machine, mixed with a gas. Probably it will be some time before a definite decision is reached as to whether its general use should be widely advocated or not. At present, it is safe to say that diethyl ether is the best of the members of its class of general anesthetic agents. In 1932, at The Mayo Clinic,[6, 13] there was a definite increase in the use of ether by the open drop method for the first time since 1922. The open drop method was employed especially when anesthesia was induced with gas and maintained with ether.

General Anesthesia with Gaseous Agents

Of the gaseous anesthetic agents, nitrous oxide is the best established one. It is, no doubt, the best gas for use in extraction of teeth, and for many other surgical operations, especially when inflammability of the anesthetic agent would increase the hazard of the operation.

Ten years ago, ethylene was suggested as a substitute for nitrous oxide and it has been used extensively with great satisfaction. However, it is inflammable and explosive and for that reason its use has been barred from many institutions. On the other hand, it is more potent than nitrous oxide and more oxygen may be given with it than with nitrous oxide. Its use has been particularly advantageous for patients with pulmonary lesions who were compelled to take a general anesthetic.

The gas most recently suggested as a substitute for nitrous oxide or ethylene is cyclopropane, C_3H_6, a saturated hydrocarbon. Henderson and Johnston have used it in the experimental laboratory, and Waters and his coworkers,[12] of Madison, Wisconsin, have used it clinically. This agent is a gas, but Waters feels that it should be kept in mind that it is more potent than nitrous oxide or ethylene. It is usually administered in a concentration of 20 per cent or less, mixed with oxygen, and the soda-lime absorption technic developed by Waters is used. The breathing bag is first filled with oxygen; then a flow of cyclopropane is allowed so that the bag will receive about 500 c.c. of cyclopropane continuously for from three to five minutes, and the flow of oxygen into the bag is about 300 c.c. of oxygen per minute. The oxygen continues to flow in that quantity throughout the period of anesthesia. The flow of cyclopropane

*From the Section on Anesthesia, The Mayo Clinic, Rochester, Minnesota. Read at the meeting of the Hennepin County Medical Society, Minneapolis, Minnesota, November 6, 1933.

is discontinued at the end of the first five minutes, for the patient will become more and more deeply anesthetized after the flow has been stopped. Five minutes after the flow of cyclopropane has been discontinued, if the patient is not sufficiently anesthetized, a flow of 500 c.c. per minute is used for about two minutes, and the flow is then stopped and the patient observed for five minutes. Thus, intermittently, the gas is added to the oxygen in the bag, and if there is no leak in the mechanism (bag, face mask, breathing tubes, and so forth), anesthesia can be maintained at a given level for a considerable time. If the patient becomes deeply anesthetized, respiration becomes very shallow, as it does with ether, and recovery occurs in much the same manner as with a large dose of ether. In other words, there is a considerable margin of safety between failure of respiration and failure of the heart.

Carbon Dioxide Absorption Technic

The soda-lime absorption technic makes for economy, quiet breathing, and retention of body heat. It is based on the principle that the body converts the oxygen into carbon dioxide, that soda-lime will remove carbon dioxide, and that the anesthetic agent undergoes no chemical change in the body and may be used again without losing its original effect. The technic generally used is to establish anesthesia with nitrous oxide or ethylene, with or without ether, and then to arrange the mechanism so that the patient breathes through the soda-lime. The flow of anesthetic agents is discontinued and only that amount of oxygen is used that will maintain metabolism. This scheme of minimizing the amount of anesthetic agent necessary in a given case makes for portability and increases the scope of gas anesthesia within and without the hospital.

Intratracheal Methods

Whenever general anesthetic agents are being given, an adequate airway is of vital importance. Many types of tubes have been suggested and used. The most perfect airway is that advocated by Magill. It is his custom to introduce a large, soft rubber tube through the nose or mouth and through the glottis into the trachea. Frequently the tube can be placed after the patient has been anesthetized; the tube is greased, is passed through the nose, and is allowed to find its way into the trachea. When the tube continues to enter the esophagus rather than the trachea, a laryngoscope can be used and the tube passed under direct vision.

This method facilitates administration of the anesthetic as well as pulmonary ventilation, and aids in producing relaxation and quiet breathing. It is essential in certain operations such as removal of intrathoracic tumors, operations on the cerebellum, and certain plastic operations on the face and throat. It is desirable in almost any case in which the patency of the respiratory passage cannot be maintained.

Guedel and Waters have suggested the use of an intratracheal catheter surrounded by an inflatable cuff, which when introduced through the mouth into the trachea, and properly placed and inflated, gives the anesthetist complete control of the anesthetic agent as well as of pulmonary ventilation. When the technic suggested by Waters and Guedel is used with the soda-lime absorption technic, the result is the production of satisfactory immediate effects as well as elimination of the possibility of aspiration of material from the nose and throat.

In general, I feel that Magill's intratracheal tube is the one which will enjoy the most widespread use. There is a tendency to use it as a routine, but it would be better to use it in cases in which it is indicated rather than in all cases in which it is not contraindicated.

Rectal Method

Of the agents introduced by rectum the one in most widespread use has been oil-ether, and the method of using this, that of Gwathmey. This method found its greatest use in obstetric procedures, but it has been used also in a great many surgical operations.

In 1926 tribromethyl alcohol (avertin) was suggested as a substitute for oil-ether, and for a time tribromethyl alcohol was used to produce full surgical anesthesia. Those who have used it most have decreased the dose, and now it is used for basal anesthesia, to be supplemented by a local anesthetic or by some anesthetic given by inhalation in a quantity much less than that which would be necessary if the supplementary anesthetic was used alone. Tribromethyl alcohol is a very useful agent, and in time will find its proper place. It is portable, and when used in safe doses the principal danger is of respiratory

obstruction by the tongue. This usually can be avoided by placing the patient on the side during the period of recovery. During operation, it is best avoided by introduction of the Magill intratracheal tube.

Intravenous Anesthesia

The intravenous method of anesthesia was attempted with saline solution and ether. More recently, various soluble members of the group of derivatives of barbituric acid have been advocated. The agents used were principally sodium isoamylethylbarbiturate (sodium amytal), sodium secondary butyl-B-bromallyl barbituric acid (pernocton) and pentobarbital sodium. At first it was advocated that full surgical anesthesia be thus established, but it was soon realized that the dose must be reduced considerably and that usually only basal anesthesia should be attempted. At the present time some of these drugs are given usually by the oral route, in small doses. However, both the administration of the barbiturates intravenously and of tribomethyl alcohol by rectum, in doses sufficient to produce surgical anesthesia may be life-saving under certain circumstances such as convulsive seizures from tetanus, poisoning by strychnine, and so forth.

An important use for the derivatives of barbituric acid is the modification or prevention of convulsions that may occur from intravenous administration of a local anesthetic agent. The availability of derivatives of barbituric acid has become so widespread that reports of unusual untoward results may be expected, especially among chronic users of the drugs. Recently, fatal and nonfatal cases of neutropenia with fever and edema of the throat have been observed following the use of amidopyrine[7] and of the derivatives of barbituric acid.[15] That the drugs have been causative of the condition, however, remains to be definitely proved.

Local, Regional and Spinal Anesthesia

Of the local anesthetic agents cocaine was the first and has been the most widely used. Recognition of the fact that the derivatives of barbituric acid have antispasmodic effect has increased the usefulness of cocaine, which has been, for some time, considered too toxic to be used generally with safety. Many drugs have been synthesized and suggested to replace cocaine. Such agents as stovaine, tropacocaine, halocaine, eucaine and procaine have been suggested and tried. Procaine found favor quickly and is the most widely used and probably still is the best, especially from the standpoint of safety. Recently, newer agents have been suggested such as, pantocain, metycaine and diothane. These agents are especially good in ointments and jells for application on surfaces of the body.

Various methods by which local anesthetic agents may be used divide themselves largely into three types:

1. The anesthetic agent is applied at the site of operation, either by instillation, swabbing, or infiltration. This method has given satisfaction, and in cases in which it is applicable it is without doubt an efficient method of producing local anesthesia, especially by the occasional user.

2. In the so-called regional methods the nerve trunk is blocked at some distance from the site of operation; the most outstanding examples are sacral block, dental block, and field block. Sacral block is particularly advantageous for operations on the anus, and may be used for operations on the perineum. It may also be used for operative obstetrics but usually not in normal labor. It has the advantage over local infiltration in anal operations that it does not distort the part and does give relaxation. It has the advantage over general anesthesia in anal operations that it produces marked relaxation with relative safety. It has the advantage over spinal anesthesia that it does not produce headache of the type that follows lumbar puncture. Brachial plexus block is another type of regional anesthesia. It is much less certain than sacral block, but is excellent when effective. Many other types of block, such as paravertebral block, intercostal block, and nerve block of the extremities, are used for operative purposes as well as for diagnosis, prognosis, and, in some nonsurgical cases, for therapeutic purposes.

3. Spinal anesthesia has been used for about fifty years. Many of the anesthetic agents already mentioned may be used. Of these the best one available is procaine. The usual method of its administration is to dissolve crystals of procaine in spinal fluid and to inject the solution in a lumbar interspace. I now use a 10 per cent solution of procaine in ampules, each cubic centimeter of solution containing 100 mg. of the agent. This is diluted with spinal fluid in the syringe and then injected at the rate of 0.5 c.c.

each second in one of the lumbar interspaces. Many years ago spinal anesthesia was used because of the extreme degree of relaxation which could be produced.

An extreme fall in blood pressure was expected and realized. Untoward results were not infrequent. A wisp of cotton fastened with collodion to the tip of the patient's nose indicated when the respirations ceased, and measures were then instituted to revive the patient. More recently, ephedrine was suggested as a prophylactic agent against fall of blood pressure.[9] Use of this was carried to extremes, and an attempt was made to keep the blood pressure at normal levels. Relaxation was less than when the blood pressure was not supported. I obtain better relaxation and longer anesthesia when only that amount of ephedrine is used which will maintain a physiologic blood pressure of, say, about 90 mm. of mercury systolic. This may be accomplished by first giving the procaine intraspinally, and then, when the blood pressure has fallen, by slow intravenous administration of ephedrine in sufficient dose, raising the blood pressure to the physiologic point mentioned. However, with considerable experience one may anticipate in certain patients what dose of ephedrine should be given intramuscularly prior to intraspinal injection of procaine so that intravenous injection of ephedrine can be avoided. During the period before operation, the dose of ephedrine I use for the average patient is about 25 mg., given intramuscularly before the spinal anesthetic. The dose of procaine used is about 1 mg. for each pound of body weight of the average person. This dose is reduced when debility from whatever cause is present, and in marked debility the spinal method is avoided. Spinal anesthesia has been advocated for the relief of ileus, especially in the postoperative period. In my experience it has not been satisfactory in the presence of peritonitis. In the practical application of spinal anesthesia it is well to give a safe dose whether or not that dose is sufficient to cause anesthesia for the duration of the operation. If anesthesia is insufficient in depth or duration it may be supplemented by a gas with or without ether. The use of ether given by the open drop method in connection with spinal anesthesia should be avoided, for there seem to be more pulmonary complications following the use of this combination than with most others. Spinal anesthesia may be used as a diagnostic measure, both in vascular disease[1] and for ruling out pain of central origin.

Artificial Respiration

Artificial respiration for patients who have undergone operations is of interest especially in large medical centers, and a pulmonary ventilator for this purpose has been developed.[5] Its use is in connection with the intratracheal tube. Recently I have been experimenting on a vest for artificial respiration, and its successful use in a case in which, in an attempt at suicide, the patient administered to himself 6 grains (0.40 gm.) of morphine hypodermically, has been reported by Tovell. There is considerable opportunity in this field for a perfection of apparatus for artificial respiration. The idea of a vest is mentioned to call attention to the need for such a device. The vest is fitted with two rubber bags which can be inflated and deflated by the pulmonary ventilator. With the vest properly adjusted to the patient, during the inflation of the bags the chest is compressed, while during deflation of the bags the chest expands and air is drawn into the lungs.

Blood Transfusion

Blood transfusion is a valuable measure in the care of many patients. Of the two methods, the direct and the indirect, I favor the latter. For years it has been the usual method of transfusion of blood at The Mayo Clinic and has been reported on by Pemberton and associates.[11] I am using the method, already established, of adding sodium citrate as an anticoagulant and administering the blood to the recipient slowly in order to avoid chills and other untoward results. The rate of administration is about 15 c.c. each minute.

Two measures which have facilitated blood transfusion in my experience I wish to call to attention. The first is the grading of donor's veins, as poor, fair, good, or excellent, so that in an emergency one may call for a donor with good or excellent veins. The second is that, in any case in which it is expected that blood transfusion or intravenous infusion may be necessary any time in the near future, the skin overlying the good veins in the ankles, arms and backs of the hands of the recipient is marked with a dye so that if the intravascular pressure becomes markedly reduced, and ordinarily the veins would be difficult to find, one may insert the needle through the mark on the skin and more

easily accomplish whatever intravenous injection is necessary.

The Future

I hope I have given some slight idea of anesthesia as it is today. I do not know what anesthesia will be in years to come. However, in this time when young people of fine minds, and their parents, are wondering what use the world will have for them, I would like to suggest that here is a field, replete with possibilities for good, in which much is yet to be discovered.

Bibliography

1. Emmett, J. L.: Subarachnoid injection of procaine: the quantitative effects of clinical doses on sensory sympathetic, and motor nerves. Jour. Am. Med. Assn., 102:425-432 (Feb. 10), 1934.
2. Goldschmidt, S., Ravdin, I. S., Lucke, Baldwin, Buller, G. P., and Johnston, C. G.: Unpublished data.
3. Guedel, A. E., and Waters, R. M.: Endotracheal anesthesia: a new technic. Ann. Otol., Rhinol. and Laryngol., 40:1139-1145 (Dec.), 1931.
4. Henderson, V. E., and Johnston, J. F. A.: Anesthetic potency in the cyclo hydrocarbon series. Jour. Pharmacol. and Exper. Therap., 43:89-92 (Sept.), 1931.
5. Lundy, J. S.: Adequate and properly controlled artificial respiration for surgical patients by means of a new pulmonary ventilator. Proc. Staff Meetings of Mayo Clinic., 7:225-228 (April 13), 1932.
6. Lundy, J. S.: Annual report of the Section on Anesthesia for 1932: anesthesia. Proc. Staff Meetings of Mayo Clinic., 8:649-652 (Oct. 25), 1933.
7. Madison, F. W., and Squier, T. L.: The etiology of primary granulocytopenia (agranulocytic angina). Jour. Am. Med. Assn., 102:755-709 (Mar. 16), 1934.
8. Magill, I. W.: Endotracheal anesthesia. Proc. Roy. Soc. Med., Sect. Anesthetics., 22:1-6 (Dec.), 1928.
9. Ockerblad, N. F., and Dillon, T. G.: The use of ephedrine in spinal anesthesia. Jour. Am. Med. Assn., 88:1135-1136 (April 9), 1927.
10. Pemberton, John deJ.: Blood transfusion. Surg., Gynec. and Obst., 28:262-276 (March), 1919.
11. Sanford, A. H.: Selection of the donor for transfusion. Journal-Lancet, 37:698-701 (Nov. 1), 1917.
12. Stiles, J. A., and Neff, W. B.: Unpublished data.
13. Tovell, R. M.: Annual report of the Section on Anesthesia for 1932; anesthesia records and blood transfusions. Proc. Staff Meetings of Mayo Clinic., 8:646-648 (Oct. 25), 1933.
14. Waters, R. M.: Advantages and technique of carbon dioxid filtration with inhalation anesthesia. Current Res. Anesth. and Anal., 5:160-162 (June), 1926.
15. Watkins, C. H.: The possible rôle of barbiturates and amidopyrine in causation of leukopenic states. Proc. Staff Meetings, Mayo Clinic, 8:713-714 (Nov. 22), 1933.

THE INJECTION OR NONOPERATIVE TREATMENT OF HERNIA*

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THE injection or ambulant treatment of hernia has unquestionably been established as a valuable type of therapy for a certain group of selected cases of this disorder. This statement is made in spite of the fact that the progress of the development of this type of treatment has been hindered and at times halted by certain possibly unwarranted prejudices which have definitely interfered with a more universal adoption of this both successful and simple method. There is no question but that at one time valid objections to ambulant treatment of hernia existed. Of these the most important was that the first solutions used caused too much inflammatory reaction, and an uncalled-for amount of pain. The method, too, soon fell into the hands of irregular physicians who mulcted a gullible public. Their use of paraffin injections, a method which has no relation to the employment of sclerosing solutions, only added further discredit to the injection treatment. And, finally, poor results occurred when the surgeon either lacked or did not apply his skill and patience with patients who frequently required treatment over a long period of time.

The injection treatment of hernia has been extremely slow of evolution but thousands of cures have been reported by the method. A parallel situation has existed in the case of the

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injection treatment of both hemorrhoids and of varicose veins of the extremities—a procedure which has become firmly established.

In the case of hernia there is no form of therapy suitable to all types of cases and it must not be forgotten that surgical procedures have had and always will have a very definite place in their treatment. Operation is not only advisable but is definitely indicated in the permanently irreducible herniæ, in those containing a viscus such as the ureter, gallbladder, uterine tube, uterus, or undescended testis, in the strangulated or incarcerated herniæ, or in those which cannot be continuously and satisfactorily retained by a truss. The remainder, estimated to be as high as 90 per cent of cases (McDonald), are practically all amenable to ambulant therapy, so that this type of treatment actually has a wider field of usefulness than radical or surgical methods.

There is considerable pessimism expressed by some authors as to permanent results from surgical repair of hernia. Although it is usually conceded that recurrences take place in approximately 5 to 10 per cent of all cases, yet it has been stated (Mayer) that this figure comes nearer to being 25 per cent or even more when one considers the fact that after a recurrence has taken place the patient is frequently reluctant to return to the surgeon, and, therefore, the true number of recurrences cannot be estimated. Frequently these patients get along so satisfactorily with the aid of a truss, or even nothing at all, that they seek no further aid.

Historical

The ideal solution to be used for these injections is one which will produce a maximum stimulation of connective tissue, yet be stable, antiseptic, inexpensive, relatively painless, and unaccompanied by danger of slough. Velpeau in 1835 and Pancoast in 1844 used respectively tincture of iodine and tincture of cantharides; Schwalbe in 1877 found 70 per cent alcohol of considerable value; and Heaton in 1878 reported a number of cures by the employment of fluid extract of Quercus albus. Janney in 1880, Warren in 1881, and Manley in 1893, reported successful results by similar methods. Lannelongue reported in 1907 on the use of 10 per cent solution of zinc chloride and was convinced that the field of usefulness of the injection treatment was greater than that of surgery. Mestre of Barcelona in twenty years' experience with more than 10,000 cases reported cures in over 99 per cent. He found that in two or three days following injections there was a barrier of adhesions which was replaced by fibrous tissue, thus effectively blocking the hernial orifice. The injection fluid which he used (called "Hernial") was submitted to the American Medical Association and found not acceptable for New and Nonofficial Remedies because both the method and the solution were considered to be unscientific, indefinite and possibly dangerous. In 1925, McDonald, after twenty-four years of experience, found that over 90 per cent of herniæ seen by him could be treated by injections with only a negligible incidence of recurrences. Susoni and Astor in 1928, and Wollerman in 1929, reported successful results from this method. The latter author treated 2,949 cases over a period of twenty-four years, obtaining cures in 94 per cent and recurrences in 4.5 per cent. The remainder (1.5 per cent) were improved but not cured. The following year a number of papers were published recommending the injection treatment. In some experimental work Hall observed marked regeneration of striated muscle with new myocytes and regenerating muscle buds after the subcutaneous injection into dogs of alcoholic tinctures of plants whose action he attributed mainly to the tannic acid which they contained. He also reported thirty-three clinical cases successfully treated. Jameson and Cantala treated sixty-four cases with excellent results and found that recurrent postoperative herniæ responded more rapidly because the surfaces of the canal were already roughened and more susceptible to the formation of adhesions. In the foreign literature Campos and Subirachs reported on the use of a solution of sodium salicylate, alcohol, hemp seed and adrenalin. In 240 cases they obtained only 67 per cent cures, but they attributed the high incidence of recurrences to the unsatisfactory physical condition of the patients, many of whom were asthmatics, or suffered from chronic catarrh, obesity, and so forth; in fact many had been refused surgical aid because of their poor general condition. Carros reported six cases in which complications resulted, consisting of local abscesses, orchitis, and recurrence. He states that the effect of these injections is to produce such an enormous amount of sclerotic fibrous tissue that normal anatomic

relations are destroyed. He thought it possible that this fibrous tissue might constrict the ductus deferens and produce sterility. Goldhahn (1930) reported five cases of hernia treated by alcohol injections, two resulting in intestinal fistulæ, one in a gas phlegmon and two accomplishing no good whatever. He believed that there is great danger to the structures of the spermatic cord, having seen two cases of testicular atrophy following this treatment. All these patients were under the care of a so-called "Specialist in the Non-Operative Treatment of Hernia," so it is doubtful whether they received proper and skillful management. Jameson in 1931 again reported successful results and in 1932 La Rochelle conservatively stated that in his opinion the injection treatment should supplement but not displace operative methods. Gray in 1932 reported

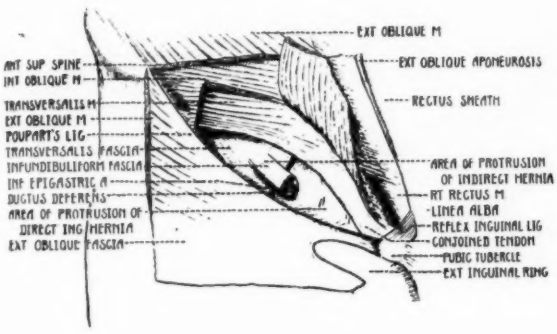

Fig. 1. Anatomy of the inguinal region showing relations of the internal and external rings, and especially the location of direct and indirect herniæ.

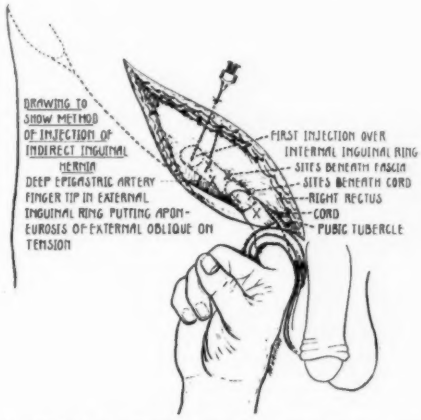
DRAWING TO SHOW METHOD OF INJECTION OF INDIRECT INGUINAL HERNIA
DEEP EPIGASTRIC ARTERY
FINGER TIP IN EXTERNAL INGUINAL RING PUTTING APONEUROSIS OF EXTERNAL OBLIQUE ON TENSION
FIRST INJECTION OVER INTERNAL INGUINAL RING
SITES BENEATH FASCIA
SITES BENEATH CORD
RIGHT RECTUS
CORD
PUBIC TUBERCLE

Fig. 2. Method of injecting indirect inguinal hernia. Solution is deposited in fascia at areas marked "X."

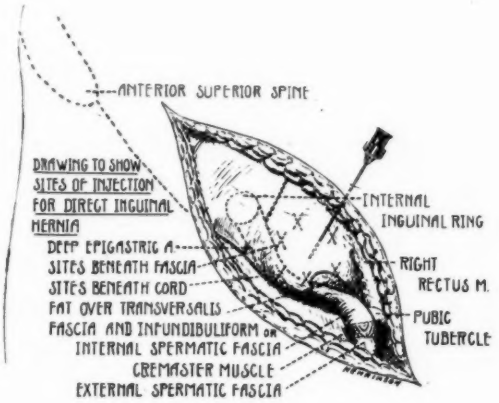
ANTERIOR SUPERIOR SPINE
DRAWING TO SHOW SITES OF INJECTION FOR DIRECT INGUINAL HERNIA
DEEP EPIGASTRIC A
SITES BENEATH FASCIA
SITES BENEATH CORD
FAT OVER TRANSVERSALIS FASCIA AND INFUNDIBULIFORM OR INTERNAL SPERMATIC FASCIA
CREMASTER MUSCLE
EXTERNAL SPERMATIC FASCIA
INTERNAL INGUINAL RING
RIGHT RECTUS M.
PUBIC TUBERCLE

Fig. 3. Anatomy of direct inguinal hernia showing areas of weakness and location of injections.

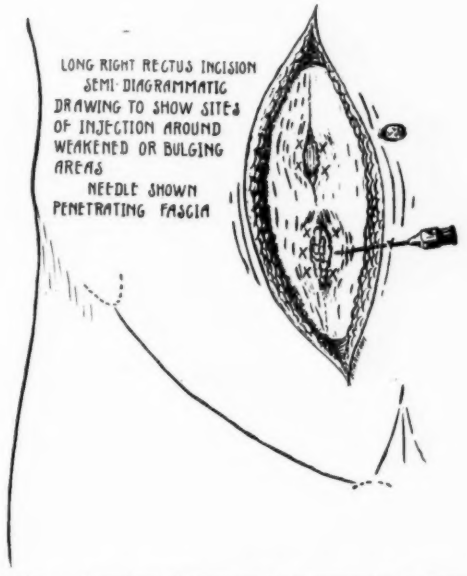
LONG RIGHT RECTUS INCISION
SEMI-DIAGRAMMATIC DRAWING TO SHOW SITES OF INJECTION AROUND WEAKENED OR BULGING AREAS
NEEDLE SHOWN PENETRATING FASCIA

Fig. 4. Locations of injections for postoperative incisional herniæ. In this case the fascia had separated in two small areas with no resultant loss of tissue. The results of treatment were excellent, cure being obtained by five injections on each side of each hernia.

cures in eighteen cases and was very enthusiastic concerning the advantages of this treatment.

To produce a maximum connective tissue proliferation, Mayer employed an aqueous solution

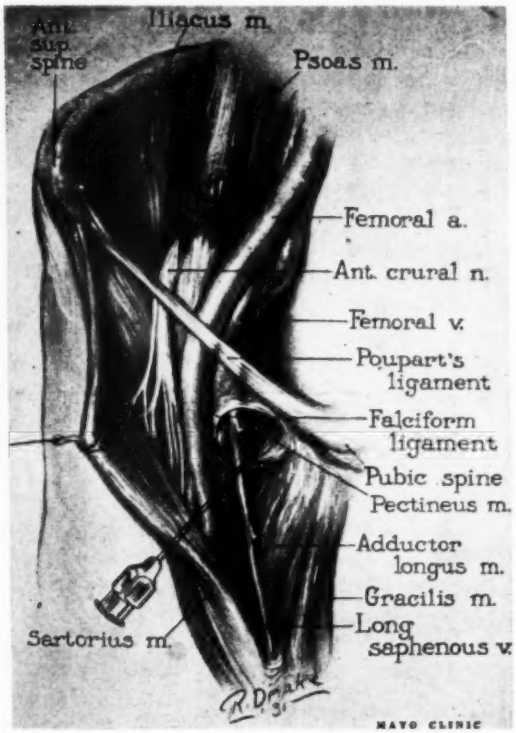

Fig. 5. Position of needle in the injection of femoral hernia. (Modified from Counsellor and Cox.)

of zinc sulphate, phenol, glycerine, cinnamon water, and fluid extract of Canada Pine which in his hands resulted in less than 2 per cent recurrence in the treatment of more than 2,100 cases of hernia over a period of thirty years. Using this same solution, Hall experimentally confirmed these findings on guinea pigs, dogs and monkeys while Wolfe accomplished the same results in rats, each injection being followed by a vigorous proliferation of connective tissue. McKinney investigated the nature of the tissue reaction following injections of a 50 per cent phenol mixture into the inguinal region of dogs, and found the formation of very fibrous young connective tissue without necrosis, hemorrhage or leukocytic infiltration. There was penetration and firm attachment of this fibrous tissue to adjoining muscles. However, experimental evidence as to curability unfortunately is impractical due to the fact that conditions in animals comparable to those in man do not exist. Rice has recently reported his results with this method using a 50 per cent phenol mixture and has found that complications are few. The most important one he found to be a localized edema and swelling of the neck of the hernial sac, occluding the latter near the external ring and accompanied by an exudation of a clear yellowish fluid into the sac, resulting in a condition similar to that found in a hydrocele.

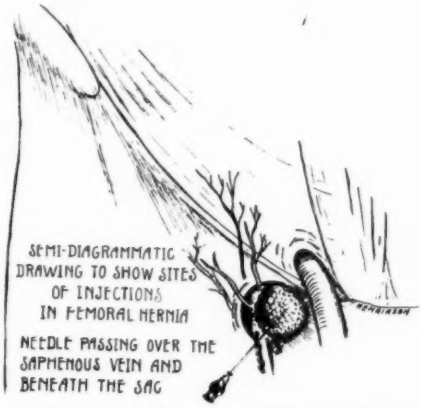
SEMI-DIAGRAMMATIC DRAWING TO SHOW SITES OF INJECTIONS IN FEMORAL HERNIA
NEEDLE PASSING OVER THE SAPHENOUS VEIN AND BENEATH THE SAC

Fig. 6. Femoral hernia with needle directed into pectineus fascia. The hernia must be completely reduced and the saphenous vein retracted laterally before the needle is inserted.

As a general rule it may be stated that any hernia which can be reduced and can be maintained continuously and completely reduced by any mechanical means such as a truss, may be treated by injections. This holds true for umbilical, inguinal, femoral and certain types of postoperative incisional herniæ, making up in all at least 90 per cent of these cases which are seen. For the remaining 10 per cent of herniæ, injections may be used to supplement surgical repair. It has likewise been frequently noted that a hernia which at first will not stay reduced by the use of any type of truss, after a few injections can easily be maintained within the abdomen.

Technic

The object of the injection treatment is to produce a sterile inflammation of the inguinal canal or of the margins of the hernial aperture so that connective tissue proliferation eventually closes not only the defect through which the hernia protrudes, but also the canal itself. Various

types of solutions have been used for this purpose, many of which produce a reaction too severe to be tolerated by the patient, a factor which will discourage the fortitude of the strongest individual.

Strict aseptic precautions must be observed throughout the treatment. A tuberculin syringe with a 1 inch Luer needle of about 23 gauge is used. The solution which has been found most adaptable in our hands for the majority of cases is one made up as follows: Phenol crystals 50 per cent, specific tincture of Thuja 25 per cent, and alcohol 25 per cent. The solution should be filtered before using.

For the first few weeks during the treatments it is imperative that the patient wear a truss constantly, day and night, which at all times maintains complete reduction of the hernia. In the indirect variety, a frame truss fitted with a round pad which covers the internal ring, such as the Smithsonian type, has been highly satisfactory if the condition is unilateral. Where the hernia is bilateral, greater pressure is necessary and, if the patient is obese, a stronger truss must be used. The Hood type of apparatus fulfils these requirements. In the matter of a satisfactorily fitting truss, one cannot be too meticulous. As Bratrud has emphasized, most trusses are fitted too low, holding the hernial contents up but not within the abdomen so that the fascia of the external ring is thinned and frayed as well as resulting in the internal ring becoming enlarged. The truss should maintain a firm pressure on the same area, constantly holding the hernia in reduction and should at all times be absolutely comfortable. By the time the injections have progressed to the point where the hernial contents no longer descend, the patient may be allowed to remove the truss at night or even during the day if he is not up and about. During the period of treatment the patient should carry on his regular work and no harm results as long as the hernia is kept back by the truss and work or exercise is not too strenuous. The truss should be worn for a period of at least six weeks after satisfactory healing has occurred, preferably longer if the patient does heavy lifting or strenuous exercise.

Indirect Inguinal Hernia

The patient lies on his back on a table and the hernia is completely reduced so that the operator may satisfy himself the inguinal canal is empty. The field is prepared with tincture of iodine, washed off with alcohol, and the internal inguinal ring then located as follows: A line is drawn from the pubic tubercle to the anterior superior spine of the ilium. About one centimeter above the mid point of this line lies the internal ring. The first injection is then made by inserting the needle just under the fascia so that the sclerosing fluid is deposited at the first portion of the inguinal canal. The direction of the needle should always be downward at an angle of about 45°, never at right angles to the long axis of the abdomen, in order to avoid any possibility of striking the peritoneal fold. Subsequent injections are each made about .5 to 1.0 centimeter farther on down the canal until the margins of the external ring are reached, where several injections are usually necessary. The exact location of the injections about the external ring can be ascertained by holding the

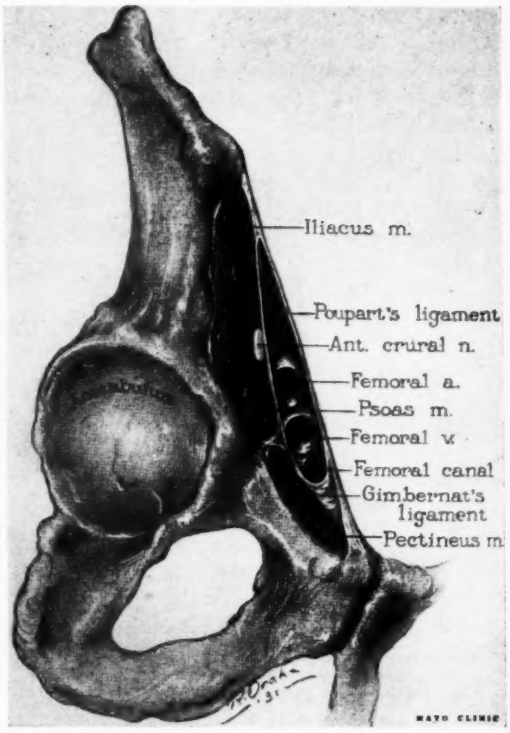

Fig. 7. Anatomical relations of femoral region seen in cross section. Injections of sclerosing solution are made into the medial and posterior walls of the femoral canal. (From Counsellor and Cox.)

syringe in the right hand while the index finger of the left is invaginated through the scrotal skin in the external ring, making it possible to accurately palpate the point of the needle. A few cases herewith reported and occurred in about 10 per cent of injections. Other reported complications such as hydrocele, epididymitis, strangulation, orchitis, sepsis, abscess, peritonitis, and

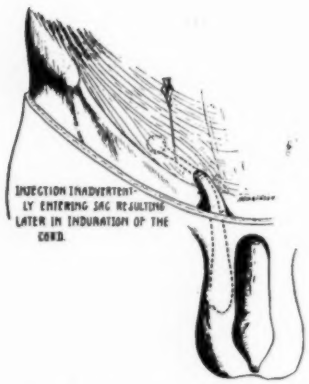

Fig. 8. When the injection fluid is deposited in the substance of the spermatic cord, a thrombophlebitis is induced resulting in induration of tissues and exudation of fluid.

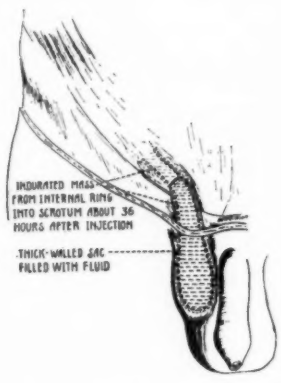

Fig. 9. Exudation of fluid into sac of hernia producing a tender elongated cystic mass. This was the most severe of the complications and occurred in about 10 per cent of cases.

Fig. 10. Aspiration of fluid from so-called case of "indurated cord."

days after each injection of the sclerosing fluid near the external ring one can palpate an increased amount of fibrous tissue, which will gradually tighten the hernial margins as the injections progress.

The dosage of the injections may be varied from 3 minims up to 12 at each sitting, depending upon the tolerance of the patient. Three minims may be injected twice weekly with little likelihood of painful reaction but the process of sclerosis is slow and time is necessary to effect a cure. The injection of 10 to 12 minims weekly is accompanied by an occasional local reaction consisting of pain in the region of the spermatic cord. This is evidenced by swelling and even effusion into the closed off hernial sac, a process which usually takes up to three weeks to subside and frequently necessitates aspiration of the contents. In the presence of such a swelling, the hernia usually stays reduced due to the plugging of the inguinal canal by this enlargement, but may recur as the swelling subsides. Sometimes if the sac is obliterated cure of the hernia results. Occasionally with these reactions it is better for the patient to go to bed for a few days and apply local heat, but in most cases they may be allowed to remain ambulant. This condition was the most serious reaction or complication seen in the so forth, have not occurred to date. A mild swelling of the cord commonly occurs toward the end of the treatments when constriction of scar tissue takes place, but this always subsides in a short time and has so far not resulted in testicular atrophy in any instance.

In the indirect inguinal group there were 93 individuals with 105 herniæ. Satisfactory results were obtained in 99 of the herniæ with an average of eight injections each. In six instances the hernial opening was too large or there was a chest condition such as asthma or bronchitis which rendered cure of the hernia impossible. In one instance of bilateral hernia twenty injections were given on each side with no apparent improvement. At operation it was found that the opening was too large to expect results from the method.

Direct and Recurrent Inguinal Hernia

These two types of hernia are considered under the same heading since they present more or less the same characteristics and the same problems. In these herniæ two fascial planes must be built up in order to permanently cure the condition, one made up of the transversalis layer, since the weakness here is in the region of the so-called Hesselbach's triangle, and the other in the plane corresponding to that of the fascia

of the external oblique. The internal ring is intact in these herniæ so no injections are necessary here. The sclerosing solution is deposited posterior to and around the spermatic cord in the tissues of Hesselbach's triangle and gradually enough fibrosis is produced so that the next series of injections are made at the margins of the external ring. The site of these injections is determined exactly the same as described above under indirect inguinal hernia. The type of truss which is best used for these herniæ is composed of a longer pad such as the French, covering a large area and held in place by a spring steel frame and groin strap. Direct herniæ require a greater number of injections than do the indirect because the defect to be filled in is larger and there is no oblique canal to facilitate obliteration. Recurrent postoperative inguinal herniæ require fewer than the direct but more than the indirect. As a rule the defect to be filled is equally as great as that in the direct variety but because of the roughening and trauma resulting from the operation tissues are more susceptible to fibrosis, and consequently cure takes place sooner. In this group there were twenty-six individuals with twenty-nine herniæ requiring an average of fourteen injections to obtain satisfactory results. In twenty-eight of these herniæ satisfactory results were obtained but in one the defect was too large to expect cure.

Postoperative Incisional Hernia

Large postoperative herniæ in which there has been considerable loss of tissue following extensive infection, such as occurs from a ruptured appendix, do not respond to this treatment. There usually are many adhesions of the bowel to the abdominal wall, even incarceration of viscera, and there is no definite hernial sac. Where there has been wound separation of not too extensive degree with no loss of fascia, and where the contents of the hernia are easily reducible, good results may be expected although the number of injections required may be considerable. For this type of hernia a satisfactory truss consists of a tight fitting elastic belt, snug enough to hold the hernial margins in apposition. Injections are made into the fascial layers with the needles directed laterally and both sides may be treated at one sitting. It is remarkable how rapidly defects of this type become filled. In one such case five injections of sclerosing fluid produced an excellent result.

Umbilical and Epigastric Hernia

The method of treatment for these two varieties of herniæ is practically identical to that of the postoperative incisional type. A shorter needle is usually satisfactory and it is possible to accurately palpate the exact site of the injections. Reduction of the hernia can be maintained by a rounded conical pressure pad attached to an elastic abdominal belt. Injections must be given until a firm heavy layer of fibrous tissue is built up. Only one epigastric hernia was accepted for treatment in this series of cases and in this individual an excellent result was obtained with ten injections.

Femoral Hernia

Since the femoral vein lies so close medially and posteriorly to the hernial sac, there is some danger of an accident in these herniæ, so it is important to obviate complications in this location by retracting the vein laterally with the fingers of the left hand and palpating the site of injection with the other. With only a few treatments hernial openings in this location close rapidly. The usual type of truss found to be most satisfactory in femoral hernia carries a round pad fitted over the femoral canal and held in place by a metal spring frame.

Hernia in Children

In the treatment of herniæ in children it is usually best to try conservative measures, such as the use of a truss, for a period of six months to a year. In many instances this will result in a cure, but if this fails and there are no contraindications, injections may be used. It must be remembered that in infants with phimosis, circumcision must first be performed before treatment of hernia is carried out to eliminate the etiological factor of straining. Dosage of the injection fluid should not be over 3 to 4 minims at a sitting, but otherwise the method is the same as that carried out in adults. There were three cases in the present series in which treatment was carried out in children. They were aged 4, 5, and 8 years, and the average number of treatments necessary was five for each individual. The results were excellent.

Contraindications

Besides the contraindications mentioned concerning complicated and irreducible herniæ, it is obvious that in the presence of any constitutional disease such as tuberculosis, lues, diabetes, venereal disease, hemophilia, any condition producing ascites, cardiac complications and malignancy, injection treatment for hernia should not be carried out.

Comment

In the series of cases herewith reported, there has been no mortality and no untoward results except swelling of the cord, as discussed above. This exudation of fluid into the closed off hernial sac may be relieved by aspiration, although it usually is a matter of several weeks before complete recession has taken place because with such a marked proliferation of fibrous tissue absorption is not rapid. There is no doubt as to the presence of a varying degree of thrombophlebitis of the cord accompanying this effusion, although opportunity to verify this has not presented itself. These reactions have been entirely local, never general, and have only occurred in about 10 per cent of injections. The remainder of patients have undergone no pain and no disability except in a few instances there has been a sensation at the time of the injection similar to that of a sharp blow on the testicle. This has always been only transitory and has never been a serious objection by any individual. Several patients have complained of a transient sharp shooting pain down into the head of the penis but this likewise has never been severe. The mechanism of this pain is undoubtedly a stimulation of some of the small sensory nerve fibers accompanying the vessels of the spermatic cord.

Criticism has been made that the injections are a blind procedure and that there exists great danger of injury to the bowel, omentum, peritoneum and blood vessels. However, when care is used in the selection of proper cases as well as in the technic of injection and when the anatomical relations are kept clearly in mind, there should be no reasonable chance of the occurrence of such accidents.

The possibility of producing sterility cannot be casually dismissed as an impossible complication, because with the formation of scar tissue, especially if it involves both the structures surrounding and within the spermatic cord, obstruction to the ductus deferens or to its blood supply can conceivably occur. However, with care in placing the injection fluid in the fascial layers and not in the cord itself, this possibility seems not only remote but likewise no greater than that following surgical repair. It is a question which time alone will answer.

No harm results from the injections should this method fail and surgery be subsequently necessary. There is no mutilation of tissues; in fact it has been stated by some authors that with the formation of larger amounts of connective tissues, surgical repair is actually facilitated, although of course it is impeded somewhat technically because of adherent structures. Since the patient has continued to be ambulant with no hospital expenses incurred there is little economic loss should operation finally be considered.

In this series of cases there were treated 93 patients with 105 indirect herniæ, and one case each of epigastric, femoral, and postoperative incisional herniæ. This makes a total of 122 patients with 137 herniæ. In 128, or 93.5 per cent of these cases, cure was obtained, but in judging these cures it must be remembered that cases were treated just as they were admitted, regardless of the size of the hernia or the age of the patient, but of course with the exclusion of those individuals who presented contraindications of either a general or local nature.

There is no doubt that when cases for injection treatment are selected with care the percentage of cures can be greatly increased, because practically all the failures in this series occurred either in individuals who presented herniæ unsatisfactory for treatment or who were uncooperative in continuing treatment for a sufficient period of time.

Summary

The injection treatment has definite indications in the therapy of selected cases of hernia. In general the indirect inguinal herniæ which are small, completely and continuously reducible, contain no viscus and occur in a young or middle aged individual without any constitutional disease offer the best prognosis for cure. Results are less satisfactory in the treatment of other types of hernia, especially if the defect is large or if the patient is elderly. Definite and absolute contraindications to the injection treatment exist when the hernia is irreducible, strangulated

or cannot be maintained in position by a truss, or in the presence of lues, tuberculosis, hemophilia, malignancy, ascites and cardiac complications.

Complications of this treatment are few and consisted in this series of cases, mainly, of a swelling and induration of the cord. Occasionally there was an associated effusion of fluid into the hernial sac which subsided in a short time after aspiration.

TRANSFUSION: A COMPARISON OF RESULTS OBTAINED BY BLOOD GROUPING AND DIRECT MATCHING*

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A CONSIDERABLE number of observers still feel that it is unsafe to perform transfusion of blood if only the agglutination groups of recipient and donor are known. They advocate direct matching of blood of recipient and donor.

The work on which this paper is based was done at The Mayo Clinic in 1926. All of the transfusions concerned were performed on the basis of Moss agglutination groups only, using the sodium citrate method. This was considered perfectly safe. Nevertheless, because of the criticisms that had been levelled at this procedure, it was determined to find out also what direct matching of the blood of recipient and donor would show. If, as compared with the proportion of reactions in the entire series of transfusions, the proportion of such reactions is smaller in that portion of the series in which direct matching indicated perfect compatibility, and larger in that portion of the series in which direct matching indicated imperfect compatibility (or incompatibility), it would be demonstrated that the criticisms had foundation; if not, it would be demonstrated, within the limits of the series studied, that determination of Moss agglutination groups was as satisfactory a preliminary to transfusion as was direct matching. Accordingly at the time of transfusion, which, as has been said, was done on the basis of Moss groups only, specimens of the blood of recipient and of donor were taken and sent to the laboratory for direct matching.

Two hundred transfusions were given to ninety patients. The number of transfusions given to each patient varied from one to eleven. A careful record was made of the reactions noted. Records were made of rise in temperature (a rise of 2° F. was recorded as a reaction), presence of chill, chilly sensations, nausea, vomiting, headaches, sweats, itching, dizziness, urticaria, jaundice, hemoglobinuria, herpes, and anaphylactic phenomena (Table I). In many instances two or more of these phenomena were observed following a given transfusion. In many cases the anemia was severe and in the average case the concentration of hemoglobin was less than 30 per cent, and erythrocytes numbered less than 2,000,000 in each cubic millimeter of blood. A summary of the results as far as reactions are concerned is shown in Table II. From the table it is evident that reactions developed following fifty-one of the 200 transfusions (25.5 per cent). This represents a much higher percentage of reactions than one would expect in a series of this type, due to the fact that every abnormality noted following transfusion was recorded as a reaction. This meticulousness was in the interest of fairness. If every phenomenon which could possibly be considered an evidence of reaction was recorded, no instance of reaction would be overlooked.

It has been said that at the time of transfusion specimens of blood of recipient and donor were sent to the laboratory for direct matching. The results in the laboratory were as follows: In no instance was there agglutination when the patient's serum was added to the donor's corpuscles, but rouleaux formed in twenty-one cases (10.5 per cent). When the donor's serum was

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TABLE I. TWO HUNDRED TRANSFUSIONS: REACTIONS MOSS GROUPING

Diagnosis	Cases	Transfusions	Fever, + 2°	Chills	Chilly sensations	Nausea	Vomiting	Headaches	Sweats	Itching	Dizziness	Urticaria	Jaundice
Pernicious anemia	51	137	29	28	6	14	10	9	9	2	2	1	1
Secondary anemia	20	29	2	3	0	0	0	0	0	0	1	0	0
Cancer with anemia	12	18	2	1	0	0	0	0	0	0	0	0	0
Leukemia	5	13	1	0	0	0	0	0	0	0	0	0	0
Splenic anemia	1	2	0	0	0	0	0	0	0	0	0	0	0
Hemorrhagic purpura	1	1	0	0	0	0	0	0	0	0	0	0	0
Total	90	200	34	31	6	14	10	9	9	2	3	1	1

TABLE II. COMPARISON OF REACTIONS: MOSS GROUPING AND DIRECT MATCHING

Diagnosis	Cases	Whole series. Moss method indicated compatibility		Portion of whole group. Direct matching indicated perfect compatibility*	
		Transfusions	Reactions	Transfusions	Reactions
Pernicious anemia	51	137	43	94	33
Secondary anemia	20	29	5	20	3
Carcinoma with anemia	12	18	3	12	1
Leukemia	5	13	0	11	0
Splenic anemia	1	2	0	2	0
Hemorrhagic purpura	1	1	0	1	0
Total	90	200	51 (25.5 per cent)	140	37 (26.4 per cent)

*In the sixty cases in which direct matching indicated incompatibility, the proportion of reaction was only 25 per cent.

added to the patient's corpuscles, agglutination appeared in thirteen instances (6.5 per cent), and rouleaux formed in thirty-seven instances (18.5 per cent). These quantities seem to add to seventy-one transfusions, but this is because two phenomena were seen in some instances; actually sixty transfusions are represented, as will appear. Of the twenty-one instances in which rouleaux formed when the donor's corpuscles were added to the patient's serum, no reactions occurred in eighteen instances; chill graded 2 occurred in one, headache in one and nausea and vomiting in one. Of the thirteen instances in which agglutination occurred when the donor's serum was added to the patient's corpuscles, in eight the donor was of Group IV. Of these eight instances, four of the recipients were of Group II, two of whom had chills graded 1, three of the recipients were of Group III, and one recipient could not be definitely grouped. No reaction occurred in the latter subject or in the three subjects in Group III. In three of the thirteen instances, the recipient was of Group I (universal recipient); in two of these the donor was of Group II, and in one, of Group III, and in the latter subject, a slight headache followed the transfusion. In the two remaining instances of the thirteen, representing one patient who received blood from two donors in the course of seven transfusions, both donor and recipient were of Group III. This particular subject, aged thirty-six years, had no reactions from transfusion (Table III). Moreover, in only three of the thirteen instances in which aggluti-

TABLE III. MAN AGED THIRTY-SIX: PERNICIOUS ANEMIA

Date, 1926	Patient's blood			Donor's blood, group	Patient's serum, and donor's corpuscles	Patient's corpuscles and donor's serum	Temperature before transfusions	Maximal temperature after transfusions	Reactions
	Hemoglobin, per cent	Erythrocytes, millions	Group						
1-23	16	0.88	III	III	Rouleau formation, graded 1	Rouleau formation, graded 4	99.0	100.0	0
1-30	20	1.15	III	III	Rouleau formation, graded 4	Agglutination	99.4	99.6	0
2-6	20	1.27	III	III	Rouleau formation, graded 4	Agglutination	99.0	99.0	0
2-26	25	1.27	III	III	Rouleau formation, graded 1	0	98.4	98.6	0
3-17	22	1.63	III	IV	0	Agglutination	99.0	100.8	0
3-26	20	1.27	III	III	Not tested	Not tested	98.2	98.4	0
4-7	48	2.30	III	III	Rouleau formation, graded 1	Rouleau formation, graded 4	98.0	99.8	0
500 c.c. blood given at each transfusion									

nation was recorded, did reaction take place clinically. Of the thirty-seven instances in which rouleaux formed when the donor's serum was added to the patient's corpuscles, no reactions were recorded in twenty-nine, chills graded 1 to 3 occurred in seven and nausea and vomiting in one. It is well known that formation of rouleaux is not considered by advocates of direct matching as evidence of incompatibility. In this work, however, just as every possible evidence of clinical reaction was recorded, so every conceivably possible evidence of incompatibility in vitro was recorded, and for the same reason.

In sixty instances mentioned in the preceding paragraph, the donor's and recipient's blood were incompatible by direct matching; perfect matching was obtained in 140 instances. The clinical results, relative to reaction, in these 140 transfusions are given in Table II.

In the sixty instances in which the patient's and donor's blood were incompatible by direct matching, as evidenced by agglutination of the patient's corpuscles by the donor's serum or by formation of rouleaux following the matching of the donor's corpuscles and the patient's serum, and the donor's serum and the patient's corpuscles, reactions were observed in fifteen instances (25 per cent).

Therefore, approximately the same percentage of reactions was observed in the whole series of 200 transfusions (25.5 per cent) in that portion of the whole series consisting of 140 transfusions (26.4 per cent) in which direct matching indicated compatibility, and in that portion of the whole series consisting of sixty transfusions (25 per cent) in which direct matching indicated incompatibility.

This is not a large series of transfusions, but probably represents a fair sample of the transfusions which have been given at the clinic, and indicates clearly, at least in this series, that direct matching of patient's and donor's blood is no greater safeguard against clinical reaction from transfusion than is use of the Moss groups. In the state of present knowledge regarding blood groups, subgroups and serologic reaction, undoubtedly reactions will continue to occur from time to time for which no adequate cause can be determined, regardless of whether Moss grouping or direct matching is used in selecting donors, and even though all of the criteria for giving a transfusion have been met.

Discussion

A. H. SANFORD, M.D., Section on Clinical Pathology: As Dr. Horton has stated, this study was made seven years ago. The experiences of the intervening period do not change our opinion of his conclusions.

Unger, in 1921, published a paper in the *Journal of the American Medical Association* entitled, "Precautions necessary in the selection of a donor for blood transfusion." He stated, "It is unsafe to perform a transfusion, relying simply on the fact that donor and patient are of the same group. Preliminary to transfusion, the blood of every patient should be grouped and then tested directly against that of the prospective donor." He did not raise the question as to whether a method of transfusion in which the blood is given rapidly to the recipient might not also be responsible for reactions. His work is of value in pointing out the existence of a condition which was shortly afterward studied by Guthrie and Huck.

Coca, in 1923, described a new pair of iso-agglutination elements in human beings of the subgroup type. He stated that the finding of new pairs "has revealed an unsuspected complexity of constitution of the known groups, without, however, changing their practical mutual relationship with regard to blood transfusions." On this basis we have continued to transfuse blood, relying solely on blood groups, using in emergencies the universal donor, and have not done direct matching except on rare occasions when the patient had some severe blood dyscrasia.

In the last eighteen years there have been performed at the clinic more than 15,000 transfusions with this method of selection of donors. Dr. Horton's group of 200 transfusions is a small sample to be sure, but it does indicate that direct matching would have been of no particular benefit in the avoidance of reactions.

A recent paper by Elser and Stillman entitled "The fetish of triply distilled water" emphasized the very important necessity of giving any intravenous solution very slowly if reactions are to be avoided. These authors stated that "solutions introduced directly into the circulation, other than physiologic solution of sodium chloride, should be administered at a rate not to exceed 5 c.c. per minute."

Bibliography

1. Coca, A. F., and Klein, Hyman: A hitherto undescribed pair of iso-agglutination elements in human beings. Jr. Immunol., 1923, 8:477-485.
2. Elser, W. J., and Stillman, R. G.: The fetish of triply distilled water. Jr. Am. Med. Assoc., 1933, 100:1326-1327.
3. Guthrie, C. G., and Huck, J. G.: Existence of more than four iso-agglutinin groups in human blood. Bull. Johns Hopkins Hosp., 1923, 34:37-48, 80-88, 128-135.
4. Unger, L. J.: Precautions necessary in the selection of a donor for blood transfusion. Jr. Am. Med. Assoc., 1921, 76:9-11.

THE CONTAGIOUSNESS OF TYPES I AND II PNEUMOCOCCUS PNEUMONIA*

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THE results of numerous investigations show that pneumonia due to type I or to type II pneumococci is practically always an exogenous infection;[3] that is, bacteria are conveyed to a susceptible individual from outside sources, chiefly in exhaled droplets from patients ill with the disease or from healthy carriers. Pneumonia due to type III pneumococci may also be exogenous in origin,[1] but is more often an endogenous infection due to the invasion of this type of pneumococcus which is present normally in the nasopharynx in a high percentage of healthy persons. Pneumonia due to pneumococcus of types IV to XXXII is almost always endogenous in origin and is seldom contagious.[4]

Pneumonias due to types I, II or III pneumococci are not ordinarily treated as contagious diseases. They are certainly not as contagious as measles, for example. Clinical lobar pneumonia is usually treated in homes or in hospital wards without exercising precautions to prevent contact infection among the attending personnel or other patients, although Cole has for years advocated strict isolation technic. In spite of this neglect, examples of direct contagion are uncommon. Indeed, in most cases of lobar pneumonia, it is impossible to trace the source of infection. Nevertheless, instances occur from time to time in which contact infection is practically certain. Small epidemics of type specific pneumococcus pneumonias have been observed. Robertson[5] reported the instance of a laboratory technician who developed type I pneumococcus pneumonia 30 hours after handling a culture of type I pneumococcus and five months later developed type II pneumonia forty hours after exposure to type II pneumococci. Cruickshank[2] briefly mentions seven instances of contact infection of types I and II

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pneumococcus pneumonia and five instances in which the convalescent carrier was presumably the source of infection.

It seems of interest, therefore, to report six examples of contagion in type I or II pneumococcus pneumonia which I have observed during the past nine years. Evidence of contagion is fairly conclusive in all. In each instance there was close contact between the source and the recipient; in four instances the recipient became suddenly ill during the illness of the patient first affected, and in each case the pneumonia in the recipient was caused by the same type of pneumococcus as that found in the patient from whom the disease was contracted.

Case 1.—Mrs. V. F., a nurse, thirty-eight years of age, had attended a patient ill with pneumonia for about a week. She began to feel ill on February 22, 1924, and was obliged to retire from service. On the following day, a sudden sharp pain occurred in the left axilla. She became worse and was admitted to the Hospital of the Rockefeller Institute on February 26. A diagnosis of type II pneumococcus pneumonia was made. The pneumonia was confined to left upper and lower lobes. Blood cultures were sterile. She recovered and was discharged March 22.

Sputum was obtained from the patient she had nursed and inoculated into a mouse. Type II pneumococci were obtained from the peritoneal exudate.

Case 2.—Miss M. W., aged twenty-three, had had a cold for about two weeks. She noted chilly sensations on February 12, 1925, felt ill and went to bed. The same day pain in the chest, cough and bloody sputum was noted. She was admitted to the Hospital of the Rockefeller Institute forty-eight hours after the onset. Pneumonia of the right lower lobe and bacteriemia due to type I pneumococcus were present. She was treated with type I antipneumococcus serum, recovered, and was discharged March 6.

Case 3.—Mrs. P. W., aged fifty, the mother of the previous patient (Case 2) was in good health at the time of the onset of her daughter's illness on February 12. She acted as her nurse until February 14 when she experienced chilly sensations. She became worse, developed pain in the right infrascapular region and coughed. The patient was admitted to the hospital thirty hours after the chill. There was pneumonia of the right lower lobe. The blood culture was sterile, but the urine contained type I specific soluble substance. She was treated with serum and recovered uneventfully.

Case 4.—Dr. B. R., a physician, aged fifty-three (record obtained through the courtesy of Dr. B. D. Bowen), developed chills October 15, 1929. The following day severe pain in the chest was noted. He was admitted to the Buffalo General Hospital as a patient of Dr. I. P. Lyon. There was consolidation of the right lung, empyema and bacteriemia due to type II pneumococci. The patient died October 25.

Case 5.—Mrs. B. R., aged forty-nine, the wife of Dr. B. R. (Case 4) was in constant close attendance and under extreme nervous tension. She returned to her home physically and mentally exhausted on October 24. The next day high fever was noted. She was admitted to the hospital extremely ill with consolidation of the right lung and bacteriemia due to type II pneumococci. She expired on the fifth day of illness.

Case 6.—History obtained from Mr. J. K. (Case 7). Mrs. M. K., aged twenty-five, developed a cold while on an extended automobile trip. About February 23, 1931, she became much worse and was admitted to a hospital in New Hampshire in a moribund condition on February 26. There was consolidation of the whole right lung. The patient died three hours after admission. The sputum was not typed.

Case 7.—Mr. J. K., the husband of the patient just reported (Case 6), returned to Minneapolis, March 1. He had a cold and on March 2, after the funeral of his wife, developed a chill, pain in the chest, cough and bloody sputum. He was admitted to the Northwestern Hospital March 4, as a patient of Dr. A. H. Beard. There was pneumonia of the right middle and lower lobes and left upper lobe due to type I pneumococcus. Recovery ensued.

Case 8.—Mrs. H. S., aged forty-one, a sister of the preceding patient (Case 7), had a cold, but nursed her brother until he entered the hospital. She became worse the day following and was admitted to the same hospital March 6. There was pneumonia of the right lower lobe, due to type I pneumococcus. Empyema developed, but she recovered eventually after a prolonged course.

Case 9.—Mrs. C. M., aged forty-eight, a patient of Dr. F. E. Murphy, who kindly supplied the record, had an attack of acute cholecystitis about December 13, 1932. On December 14, temperature of 103° was noted and pneumonia of the left lower lobe due to type I pneumococcus developed. Although she was given five doses of antipneumococcus serum she expired on December 22.

Case 10.—Mr. C. M., aged fifty, the husband of Mrs. C. M. (Case 9), had been in constant attendance at his wife's bedside although he had a severe cold. On January 1 he developed a chill followed by cough and bloody sputum. Pneumonia of the left lower lobe due to type I pneumococcus was present. After five doses of antipneumococcus serum the patient recovered.

Comment

These cases demonstrate the importance of regarding pneumococcus pneumonia, especially that due to types I or II, as a contagious disease. They further emphasize the necessity of devoting attention to the prevention of infection among other members of the family who are usually worried and become exhausted from attending the patient, often to the state of diminished resistance to infection. Noteworthy in this respect is the fact that although numbers of persons

came in contact with the patients described, only a few became infected and each of the latter suffered some indisposition at the time. It is probable, considering the epidemiological studies of Stillman,[7] Rosenau, Felton and Atwater,[6] Strøm[8] and Gundel that many of the persons who came in contact with the patients became transient carriers of the type of pneumococcus disseminated in the patient's exhalations. Pneumococci were apparently unable to invade healthy individuals with adequate resistance, but in those whose resistance was sufficiently diminished by colds, fatigue or other factors, invasion occurred and pneumonia developed. It is evident then that the coincidence of several factors is required before pneumonia occurs, namely, (a) a source of virulent organisms, (b) the means of conveyance of the organism from the source to a susceptible host and (c) a susceptible host.

It is, furthermore, necessary to abandon the concept of the enhancement of virulence as the pneumococcus passes from host to host as a prerequisite of invasiveness. The pneumococcus, especially that of type I or type II, shows slight if any fluctuation of virulence, as far as can be measured, whether it is obtained from healthy carriers, or from patients ill with pneumonia or convalescent from it. It is therefore necessary to regard diminution of host resistance of greater importance than increase of virulence of the bacterium in the epidemiology of pneumococcus pneumonia.

The question may arise as to whether it is valid to conclude that in each of the examples of contagion cited, infection was transmitted directly from the one patient to the other or whether both became infected from a third source or if both were merely coincidental and unrelated accidents. It is impossible to establish any of these possibilities absolutely, but it is highly probable that contagion was transmitted from the first patient to become ill to the second person in each group. Patient 1 did not come in contact with the patient she attended until after he had become ill. The same pertains in cases 3 and 2. The sequence of events in cases 6, 7 and 8 is further suggestive of the direct transmission of infection from one person to another, although 4 days elapsed between death in case 6 to the onset of illness in case 7.

Summary

Six examples of contact infection of pneumonia due to type I or type II pneumococci are recorded. In most cases, persons contracting the disease from patients were not in the best of health. Although pneumonia due to types I and II pneumococci is not as contagious as certain other infectious diseases, it is, nevertheless, transmissible from one person to another. It is important for attendants to exercise precautionary measures to prevent contagion when in close contact with patients, especially if suffering indisposition such as results from fatigue or from upper respiratory infections.

References

1. Blake, F. G.: Observations on pneumococcus type III pneumonia. Ann. Int. Med., 5:673 (December), 1931.
2. Cruickshank, R.: Pneumococcal infection: lobar pneumonia in the community. Lancet, 621 (March 25), 1933.
3. Gundel, M., and Keller, W.: Die Pathogenese der Pneumonien. Klin. Wchnschr., 12:1208 (Aug. 5), 1933.
4. Gundel, M.: Bakteriologische und epidemiologische Untersuchungen über die Besiedlung der oberen Atmungswege Gesunden mit Pneumokokken. Ztsch. f. Hyg. u. Infectionskrankh., 114:659, 1933.
   Gundel, M., and Seitz, L.: Die Pneumokokkentypen der gesunden Bevolkerung, Klin. Woch., 1933, 12:929 (June 17),.1933.
5. Robertson, O. H.: Instance of lobar pneumonia acquired in the laboratory. Jour. Prev. Med., 5:221, 1931.
6. Rosenau, M. J., Felton, L. D., and Atwater, R. M.: Epidemiologic study of pneumonia and its mode of spread. Am. Jour. Hyg., 6:463, 1926.
7. Stillman, E. G.: A contribution to the epidemiology of lobar pneumonia. Jour. Exp. Med., 24:651, 1916.
8. Strøm, A.: Epidemic of croupous pneumonia caused by pneumonia type I. Jour. Inf. Dis., 50:430, 1932.

CASE REPORTS

SCURVY*

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Patricia Anne, nine months of age, was seen at the Mankato Clinic in July of last year. The family history was negative. At birth she weighed 8 pounds and 4 ounces, and delivery was normal. The baby made the average gain from birth, being bottle fed on milk and dextrimaltose mixture. She was given cod liver oil from the first month. She did not have orange juice until the fifth month, and then irregularly. She was on pasteurized milk, and only a small amount of vegetables.

On July 24, 1933, the baby began to cry a good deal when moved, especially when the lower extremities were moved—more so upon moving the left leg. The condition came on gradually, and when seen, there was inability to move the legs; this was probably on account of pain. She slept well, and seemed normal, except when moved. She took her food well and the bowels were normal.

On physical examination the baby looked healthy, her color was fair and turgor was excellent. Both limbs were drawn up and turned slightly outward. No swelling or local points of tenderness were found. There was normal mobility of spine and hips. The temperature was normal. Reflexes were normal and the Chvostek negative. The baby had seven teeth. The throat, ears, heart, lungs, and abdomen were negative. The hemoglobin was 60 per cent; the white blood count 10,000. Urine examination was negative. The Mantoux test was negative. X-rays of the spine and extremities were negative. However, two weeks later, after the baby had been on treatment, the film showed definite calcification and subperiosteal hemorrhage at the lower end of the left femur; also a slight increased density of the epiphysis and slight spurring. The diagnosis was made of healed scurvy.

A differential diagnosis lay between tuberculosis, injury, infantile paralysis, multiple neuritis, osteomyelitis and periostitis and scurvy. The slow onset, the unwillingness to use the legs, the pain on motion, and the position in which the legs were held (as seen by the x-ray film), were almost pathognomonic of scurvy, and justified that diagnosis without any further evidence. The prolonged use of boiled milk, together with the irregular giving of orange juice, helped to corroborate the diagnosis.

In the July number of the American Medical Association Journal in an article by Dr. Nelson of Cincinnati, this point is brought out, namely that subperiosteal hemorrhages in infantile scurvy may not be visualized in the roentgenogram until calcium salts are deposited in the periosteum. This deposition depends upon the administration of Vitamin C. When the roentgenogram demonstrates that calcium is present in the periosteum surrounding the hemorrhage, it indicates that Vitamin C has been given, and that healing is proceeding. Unless serial roentgenograms are taken after the administration of Vitamin C, the diagnosis of subperiosteal hemorrhage may be overlooked.

At the time the diagnosis was made in this infant, there was no visible sign of scurvy. The only way that a diagnosis could be arrived at was by exclusion. The diagnosis was clinched, however, by the treatment; after crowding the orange juice, cod liver oil, and viosterol, and giving the child unpasteurized milk and radiation with the alpine light, she improved rapidly, so that in less than a week the pain was gone and the baby could be moved without crying.

At present she moves her legs freely, and is gaining in weight.

*Presented before the Northwestern Pediatric Society in connection with the annual meeting of the Minnesota State Medical Association, Duluth, July 16, 1934.

FOREIGN BODY REMAINING IN PERITONEAL CAVITY AFTER OPERATION

Extraction Through Drainage Tube by Means of Esophagoscope

HERMAN J. MOERSCH, M.D.

Rochester, Minnesota

Greenhill found, in study of 109 cases in which a foreign body was left in the peritoneal cavity after operation, that the mortality rate was more than 17 per cent. The frequency of this surgical complication is impossible to ascertain, for there is a striking discrepancy between the information obtained from insurance companies and that gleaned from medical literature.

Although such foreign bodies usually are removed by laparotomy, recently, at The Mayo Clinic, we had the opportunity to remove such a body by use of an esophagoscope introduced through a postoperative sinus. A review of the literature failed to disclose a previous report of such a case.

Report of Case

A man, aged fifty-four years, had been operated on elsewhere nineteen hours after the onset of symptoms for acute appendicitis; the surgeon was experienced and capable. At operation, a great quantity of seropurulent fluid was withdrawn from the pelvis and peri-

*From the Division of Medicine, The Mayo Clinic, Rochester, Minnesota.

toneal cavity by means of a Poole suction tube. The appendix was found imbedded in the pelvis and matted down by inflammatory adhesions. It was gangrenous throughout, with a perforation toward the tip. When closing the abdomen, it was noted that the tip of the Poole aspirating tube was missing. A thorough search was made of the dressings and abdomen, but the tip could not be found. On account of the patient's condition, it was deemed inadvisable to carry the investigation further at that time. The abdomen was closed, and a large drainage tube of split rubber was left in the wound. Convalescence was rapid and satisfactory.

Roentgenograms made of the abdomen ten days after operation revealed the tip of the tube within the abdoment at a point above the brim of the pelvis. The possibility of removing the foreign body by means of an electromagnet was considered, but was not found feasible, for tests demonstrated the suction tube was not magnetic. The following day with the patient under anesthesia a protracted search was made for the foreign body, by means of dressing forceps introduced through the drainage tube and through the operative wound, but this was unsuccessful. The drainage tube was permitted to remain in place. Roentgenograms taken six days later still showed the foreign body to be in the same place. The following day, the patient was brought to the clinic by his physician for further investigation.

The patient was found to be in excellent condition; a split rubber drainage tube was present in the right lower quadrant of the abdomen. Roentgenograms of the abdomen revealed the presence of the foreign body on the right side, just anterior to the fifth lumber vertebra (Figs. 1 and 2). After consultation, it was thought advisable to make an effort to remove the foreign body by means of an esophagoscope. Without anesthesia, a small Breuning esophagoscope was introduced through the drainage tube into the peritoneal cavity. By means of a fluoroscope and with the assistance of Dr. Camp, the esophagoscope was directed toward the foreign body. It was necessary to displace two loops of bowel; following this the esophagoscope encountered an inflammatory mass lying against the spinal column. With forceps an opening was made through the mass and the foreign body was located; it was then readily extracted with the esophagoscope. The patient recovered uneventfully and was permitted to return home the next day. He stated that the procedure caused him no discomfort.

Fig. 1. Situation of aspirator tip; anteroposterior view.

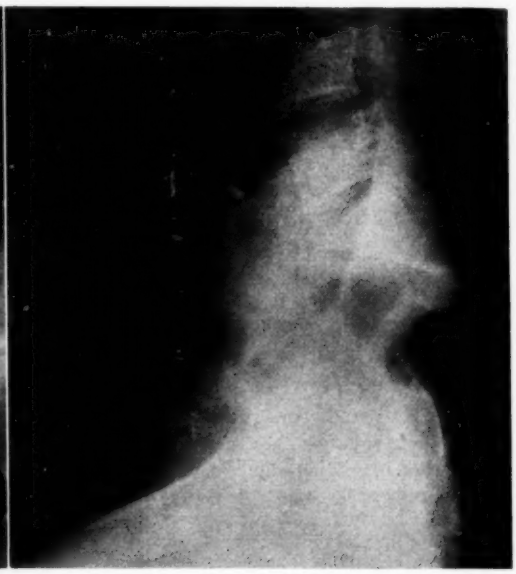

Fig. 2. Same as Figure 1; lateral view.

The case is of special interest, as it presents an easy and satisfactory means for carrying out such a procedure; the patient is spared the necessity of laparotomy, with its greater difficulty of locating the foreign body, especially when of small size, and when the fluoroscope cannot be used.

Bibliography

1. Greenhill, J. P.: Foreign bodies left in abdomen after operation. Am. Jour. Obst. and Gynec. 25:231-240 (February), 1933.

EDITORIAL

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BUSINESS MANAGER
J. R. BRUCE, Saint Paul

Volume XVII — DECEMBER, 1934 — Number 12

Amidopyrine and Agranulocytosis

Warnings have come from various sources of the occurrence of agranulocytosis following the taking of amidopyrine and allied drugs. The report by Jackson in the October number of the *American Journal of Medical Sciences* is one in point. Of his series of twenty-seven cases, seven were tentatively considered by the author to have been caused by these drugs. Five of the seven patients received pentonucleotide treatment and recovered. The remaining two received no treatment and died. Of three patients who continued to take amidopyrine, one died and two, rather inconsistently, recovered. One who continued to take the drug continued to have attacks, while a number took amidopyrine and allonal after an attack without effect on the white blood corpuscles. While evidence of this sort is not conclusive, it is most suggestive.

The significance of the warning is that it would be wise not to administer to a patient with agranulocytosis a drug containing the phenol radical, which is probably the dangerous constituent.

The average physician is content to prescribe a sedative without knowing the chemical composition of the drug. In view of the apparent effect on the white blood cells of at least some of the numerous hypnotics on the market today, it is essential that the composition of some of those more commonly used be known. The Federal Food and Drugs Act does not require the labeling of the composition of hypnotics and certainly there is no excuse for prescribing remedies of unknown composition.

Antipyrine, acetanilid and amidopyrine (pyramidon) all contain the phenol radical. The popular and effective allonal is a mixture of amidopyrine and barbituric acid. We know of one instance where a young woman took twenty-five allonal tablets with suicidal intent, but with no deleterious effects following prompt treatment. Migrainine is a mixture of antipyrine and caffein citrate.

Phenobarbital (luminal), as the name indicates, contains the phenol radical. In spite of the marked increase in the sale of this popular sedative, forty-five thousands of pounds said to have been sold in 1932, we have encountered no report of an instance in which the remedy presumably caused an agranulocytosis. Among the barbiturates which do not contain the phenol group may be mentioned barbital (veronal), diallylbarbituric acid (dial-Ciba), N-Butylethylbarbituric acid (neonal) and amytal.

Sulphonemethane (sulphonal) and sulphonethylmethane (trional) belong to a different group of hypnotics which do not contain the phenol radical. Carbromalum (adalin) is bromidiethylacetylurea and is also free of the phenol group.

The toxic effect of alpha dinitrophenol on the white blood cells deserves special mention in view of its recent vogue as a reducing drug. Two instances of death following its use have been reported in which destruction of the white cells was outstanding.

Valuable as these hypnotics are, some restriction should be placed on their sale. At present they may be purchased in almost any amount

over the drug store counter. The barbiturates have taken front place in Paris as a means of attempted suicide according to Flandin. Their sale should be limited to prescription by a physician.

Christmas Seal—1934

Dr. Edward Livingston Trudeau, a great physician, who fifty years ago initiated the sanatorium movement when he built "The Little Red" cottage in the Adirondacks, is honored by the 1934 Christmas Seal.

This commemorative Seal, dedicated to honor a great physician, brings to our attention the fact that The National Tuberculosis Association and its branches was founded, developed and is directed by the medical profession. Now, when this closely affiliated organization is making its annual appeal for funds through the 1934 sale of Christmas Seals, it is timely for members of our profession to consider the close identity of interest which has existed for the past twenty-seven years between tuberculosis associations and the practising physician.

To interest the private physician in the diagnosis and care of tuberculosis and to urge the public to consult the private physician has been the primary object of the tuberculosis association. No other public health agency so directly and certainly works with the medical profession.

It is a gratifying fact that not only in Minnesota, but throughout the nation, the leadership of the tuberculosis association and the direction of its policies is vested in the medical profession.

It is not an overstatement to say that the Christmas Seal sale supports a cause to which the physician logically owes support.

Buy generously of the holiday stamps which finance a year-around campaign of education to prevent disease.

N. O. Pearce, M.D.

Free Medical Journals

A gifted editor* and vigorous stylist pays tribute under the above caption to piratical practices devised by vendors of proprietary remedies to have their advertisements read. Once the method is pointed out it is all pathetically simple. A brochure opening up with admirable historical and pictorial references to the masters of the guild eases through a "time-worthy" digest of excellent articles from the best of journals and finishes up luridly with something savoring of subumbilical humor adduced presumably to "tone and sedate."

So many of these abound that no doctor needs further identification marks. The flood is on the increase. It is obvious these are not "free"; some one gets paid for them; and rumor has it, paid very well. Certainly the men and journals submitting to this piracy get nothing except the opportunity to make possible commercial exploitation of remedies to which our reputable journals have long closed their pages and the A. M. A. has set up an expensive laboratory for standardization.

Every editor admittedly is interested upon more than purely ethical lines. In so far as any worthwhile journal needs support from its advertising pages it must view with suspicion the trick of securing the attention of medical readers by a combination of effective journalism, judicious intersprinkling of financial and economic advice, due abuse of bankers and praiseworthy comments apropos of the thankless job of being a doctor's wife!

The business acumen of these exploiters does not deserve the criticism which we do for submitting to the whole affair. We should, as County Societies, agree and have our secretaries send a roster of our membership, demanding of these spurious second-hand vendors to take our names off their mailing list forthwith.

E. L. T.

*"F. S." in the *American Journal of Digestive Diseases and Nutrition.*

The Hearing Survey and the Doctor

With the advent of hearing tests that are being conducted throughout the schools of the state, it is well for us to consider how best we can assist this worthwhile project. We all know that the time to correct difficulty in hearing is in the early stages before permanent changes have taken place. We also know that patients seldom seek advice early, especially if only one ear is affected.

The tests that are being made are mostly with the audiometer, by means of which groups of children may be tested at one time. The hearing of each ear is taken separately and a record

is made of each child's ability to hear the words that continually become fainter as they come from the audiometer. If there is a marked loss of hearing in one or both ears, the parents are notified and they are requested to take the child to the family doctor. Parents, generally, do not want to believe there is anything wrong with their child, except that he or she is a little inattentive. They may, however, decide to take their child to their family physician, and it is important to start them on the right track at their first visit.

To check the hearing, one ear should be tested at a time, the patient either closing the eyes or turning away from the doctor. One ear may be closed by the patient's moistened finger in the meatus or by pressing the tragus cartilage.

In a fairly quiet room a patient with normal hearing should readily hear a low whisper or a low conversational voice at twenty feet. This, of course, varies in case other noises interfere. A patient with marked obstructive deafness may hear the high whispered note better than the low conversational tone, while one with nerve deafness would hear the low tones better.

A thorough examination of a patient with poor hearing should include: (1) inspection of the external auditory canals for any obstruction such as ear wax, foreign body, pus, new growth, or anything that will prevent the sound waves from reaching the middle ear; (2) examination for the presence of adenoids because of their proximity to the Eustachian tubes; (3) ruling out the tonsils as a possible focus of infection or the cause of frequent colds; (4) inspection of the nose for evidence of sinus infection or obstruction to breathing.

In advanced hard of hearing cases, it is advisable that the patient have not only a local but a general physical examination, including urine and blood examination and an investigation as to possible deficiency in some glandular secretion.

There are, of course, cases of hopeless progressive hereditary deafness in which no form of treatment will be of avail, but no case should be considered hopeless until a thorough examination has been made. When serious deafness has arrived, resort to lip reading is recommended.

In conclusion, I again request your careful consideration of any patient coming to your office with a history of hearing difficulty, whether it has been noticed by himself, his parents, his teacher or the nurse who has conducted his first hearing examination. If this is done, the progress of many cases of failing hearing will be checked, and we will have broadened the field of preventive medicine.

E. R. Bray, M.D.

MAHLON LOCKE—FOOT TWISTER EXTRAORDINARY

The publicity accorded to Mahlon Locke, Canada's newest contribution to faith healing, has aroused great interest among both the medical profession and the public. The profits to be derived from the sale of shoes to persons suffering with chronic diseases affecting the bones and joints has induced many a department store to add a Locke department to its shoe section. Disciples of the Canadian healer journey about with a motion picture film demonstrating Locke himself in action at the shrine in Ontario. The doctor is shown at work, sitting in a swivel chair while human beings come toward him from eight radiating paths to put their feet trustingly in his lap. Either just before or just after he receives the feet he also receives a dollar bill, which is deposited in his pants pocket. He then bends the foot outward and downward and the patient moves on. Some sort of an associate bends the hands of the patients and there are adjacent quarters in which women assistants wiggle the arms, bend the neck hither and thither and bend the back of the patient over a table. It should be obvious to any one that Dr. Locke's treatment represents psychologic suggestion reënforced by the laying on of hands; perhaps in a few instances the pulling of an adhesion such as any masseur might attempt. The activities of Dr. Locke are a burlesque on the scientific practice of medicine. His promotion is a violation of every traditional, ethical tenet! There are some who say that even psychologic relief for the chronic arthritic patient is worth while, regardless of the means by which it is accomplished. The reaction on the scientific practice of medicine and the chagrin and disappointment of those seriously sick do not permit this *laissez faire* attitude. Moreover, many a person who might be benefited by scientifically applied physical therapy and by competent orthopedic surgery is spending hard-earned money to make the long trek to Williamsburg in search of a pot of gold which those at the end of the rainbow are quite consistently saving for themselves. (*Jour. A. M. A.*, October 13, 1934, p. 1153.)

MEDICAL ECONOMICS

Edited by the Committee on Medical Economics
of the
Minnesota State Medical Association

B. J. Branton, M. D. W. F. Braasch, M. D., Chairman J. C. Michael, M. D.

Questionnaire

[*Each month these columns will try to express briefly, for purposes of the average physician who is going to be questioned as never before this winter, why that same average physician fears and opposes health insurance.*]

Organized medicine is opposed to Health Insurance. Why?

The question will be asked you this year, not by social theorists, but by practical politicians, legislators and lawyers.

Why doesn't the practicing physician want some scheme of pre-payment for his services? It will mean a certain income, won't it? It will mean better care for a class of people that isn't getting proper care now, won't it?

These are the questions that will be put to you, Mr. Physician. What are you going to say to them?

You have a deep rooted feeling against these pre-payment insurance plans. Is this feeling based upon prejudice? Is it mere selfishness? Are you afraid, for example, that somebody is going to set your fees for you? You will never have that chance at that rich patient who will pay you those mythical big fees?

Are Your Motives Selfish?

You believe, perhaps, that nobody seriously attributes such motives to you. You are wrong. That is precisely the reaction of a great many laymen to the objections voiced by organized medicine to the Majority Report of the Committee on Costs of Medical Care. What are you going to say to them? If it isn't selfishness, then what is it?

To take one of the questions cited above:

Will Insurance Bring Better Care?

Question: Will health insurance bring better medical care to the class of people who are not getting proper medical care now?

Answer: The quality, amount and type of medical care available to all classes of persons in the United States today is the best in the world. That is true in spite of the fact that there are many problems connected with the delivery of medical service in this country that must be solved.

In all European countries without exception that now have the insurance system of medical care, the quality of care is inferior and unsatisfactory and it is purchased at an exorbitant expenditure of the government funds.

In some of these countries, notably in England and Germany, from whom the most information comes to us, the present situation may be better for some classes than the complete absence of facilities that may have existed before health insurance. That does not mean that health insurance should be recommended to solve the American problem. Why?

Sure to be Politics

Health insurance that is supported, even in small proportion, by tax money is bound to be under political control. There is no way out of that.

It is *impossible* to draw upon government or state or even local funds on any such scale without the creation of political appointments and bureaus for administration. Anyone who believes anything else is an impractical visionary. He has only to look about him at other welfare activity that is government supported.

If political control and manipulation slows up and misdirects expenditure of funds for housing or farm relief or public works, can we expect for a moment that it will not slow up and misdirect the care of the sick?

Medical and hospital care for the sick is sometimes expensive under our present system owing to the actual cost of elaborate modern methods of treatment, but no charge of graft has ever been laid against it.

Can we believe that medical and hospital care of the sick will be carried on without graft when politics enters this field too? Hardly. The cost of medical care, vastly more than at present, will then have to bear, also, the cost of the necessary politics, a heavy new bill for the taxpayer to pay.

Health Not Improved

Question: But suppose some politics is mixed up in the administration of the insurance scheme. Suppose it does cost the taxpayer more money If it should actually provide medical care for those who aren't receiving it now, wouldn't it be worth the trouble for the future health of our nation?

Answer: Perhaps it would, if that were actually the case. But it hasn't worked out that way in Germany or England or any other country where health insurance has been in operation for years.

There is still sickness in all of those countries, more, by statistical record, than there used to be. The morbidity rates in the United States are the lowest in the world.

In fact there is not only a great deal of real sickness, but there is also a great deal of malingering in those European countries. Those who are paying continuously for health insurance are naturally disposed to get their money's worth in medical service. When cash benefits for disability are involved, as they are in the American Association for Social Security's model bill, the incentive to malinger is overwhelming.

At the same time, nothing but education will bring people to the insurance doctor any more than to their private physicians at the time when it is really possible to prevent serious illness. It is one thing to make medical care available without cost to the people. It is another to teach them to make intelligent use of the privilege.

American Standards Best

Most American schemes for health insurance make it a point to provide for free choice of physician for the patient and also for preservation of the confidential physician-patient relationship.

It is the experience in other countries, however, that both these important adjuncts to our American system of medical care are greatly endangered if not entirely lost under health insurance.

The physician's records are open to the inspection of bureau heads and administrators, which means that they are open to employers, too.

The insurance doctor is almost certain to be forced to carry a larger patient load than he can adequately look after and his treatment of each case will be determined as much by rules and regulations of the lay people who are managing the project as by the needs of the patient.

It has worked out that way in England and in Germany. Is there any reason to suppose that Americans will be more fortunate?

Is It Satisfactory to Physicians?

Question: But I thought that health insurance was working very satisfactorily to the physicians, at least, in England.

Answer: Not if the actual number of physicians registered to participate in panel practice is any sign. Only 40 per cent of the physicians are engaged in that kind of practice today and the salaries of those who are registered for the panel are not more than $2,000 a year. In many cases they are much less. In England, of course, panel practice is an established fact now. It is so firmly intrenched in the English political system that it is no longer possible to consider any other form of medical practice there. This is a major menace to the adoption of any form of state controlled medicine.

In America we have the chance today to work out practical schemes for assisting the hard-pressed patient to pay for his own medical care when the emergency arises. Several such schemes are now being tried out in Detroit and elsewhere. In them we have our best chance today to insure good medical care to all classes of people, at the same time preserving the independence and self-respect of both patient and physician and the progress of medical science and practice in America.

Doctors Will Advise

The letter printed below from Mr. Edwin E. Witte, executive director of the President's Committee on Economic Security is in response to a letter written by Dr. E. A. Meyerding, Secretary of the Minnesota State Medical Association, at the direction of the Council, to the President of the United States. This letter requested a hearing for the practicing physician, as represented by

organized medicine, before any plans for distribution of medical care were formulated for submission to the President by the Committee.

The telegram from Dr. Olin West of the American Medical Association shows the result.

Physicians will await with interest the statement asked for by Dr. West.

Here is Mr. Witte's letter.

COMMITTEE ON ECONOMIC SECURITY
Walker-Johnson Building
1734 New York Avenue, N. W.
WASHINGTON

November 2, 1934

Dr. E. A. Meyerding,
Secretary,
Minnesota State Medical Association,
11 W. Summit Avenue,
St. Paul, Minnesota.

Dear Dr. Meyerding:

The President has asked us to acknowledge your letter of October 24 in which you suggest that this Committee, in consideration of medical problems, give representation to the American Medical Association. In reply, allow us to say that the Medical Advisory Committee which we are organizing will have among its members the President of the American Medical Association, also several of its ex-presidents. All members of this committee, are eminent physicians and surgeons, whose names, when announced, will show that we are having most competent professional advice. Permit us also to say that when this committee was first organized, we advised the American Medical Association that we would appreciate its coöperation. More recently, we have asked that it make available to us the results of the research carried on by its Bureau of Medical Economics and we have had its assurance that it will do so. Only this week we talked with Dr. West, the secretary and manager of the Association. We suggested that he present any views he might have to offer on the subject of health insurance and promised him that if he would do so we would see that his views were submitted to each member of the committee. Dr. West assured us that he would do this.

Appreciating your interest in the work of this committee and assuring you that we have no intention of making any recommendations without consulting the profession, we are

Yours very truly,
COMMITTEE ON ECONOMIC SECURITY
Edwin E. Witte, Executive Director.

Dr. West's message:

November 19, 1934

Dr. E. A. Meyerding,
11 West Summit Avenue,
St. Paul, Minnesota.

Medical Advisory Committee of Committee on Economic Security adjourned after three days meeting without proposing any plan. Committee asks for further time for study. Leland and Simons of our Bureau of Medical Economics made members of Technical Staff of Committee. Best available advices indicate that official action on sickness insurance will be deferred. We have asked Washington for official statement to be printed in Journal.

OLIN WEST.

Danger in Washington

Judging by newspaper reports of the last election, the Medical Practice Act of the State of Washington stands in grave danger of disastrous tampering, if not of repeal.

The Democratic platform for the state, drawn up last May, contained the following party "plank" as quoted in the August issue of *Northwest Medicine*:

"We propose such change in the laws relating to the laws of healing as will put all licensed practitioners on an equality before the law."

Thus the Democrats. Immediately the Medical Practice Act became a party issue in the elections.

The Republicans drew up the following party plank in June:

"We regard the health of the people of our state to be of paramount importance," said the Republicans. "Therefore, the Republican party stands for the high standards of public health and medical care and for no further changes or reductions in the standards established under the present Medical Practice Act."

Reports of the Washington elections show a Democratic landslide in the state House of Representatives and the state Senate. Other state offices did not come up for election this year.

This news item shows the danger when medicine is allowed to become a political football.

It shows also:

1. The necessity for educating the public that the present Medical Practice Act, as far as Minnesota is concerned, is undoubtedly our greatest safeguard for the public health. We should inform the public of the great dangers involved in changing that act to lower its standards.

2. The necessity for close organization of medical association members in each state and county.

No Group Stands So High

Says Dr. Edward H. Ochsner, Chicago, in a recent issue of the *Illinois Medical Journal:*

"I believe that medicine today stands the highest in the estimation of the American people of any group in society. I am not pessimistic at all about the opinion of the public. If you look through the magazines and the daily papers, and look at the reception that was given the majority report of the Committee on the Costs of Medical Care and then look at the reception given the minority report of the same committee, you will

find my contention substantiated. Almost every line that was written in American journals and newspapers was commendatory, not of the main report, but of the minority report. I repeat that there is no group in American society today standing so high and having such a splendid record for achievement as the medical profession. Great human crises such as that we are passing through today are apt to bring out a host of nostrum cures. The medical profession should go right along and mind its own business and not attempt any of these nostrums. I think the people are getting 'fed up' on flamboyant advertising. One needs but to listen to the radio for one single evening in order to be convinced of this. One great fault of the American people is faddism, but when the fad goes too far it defeats itself, just as the streptococcus or staphylococcus dies off in its own excrement. The thing for the American physician to do is not to get panicky, to sit tight and keep on in the dignified way that has been theirs throughout history, and they will win out."

Diabetes Book

Orders for extra copies of the diabetes booklet, "Diabetes—How to Make It Harmless," published by the Committee on Diabetes of the Minnesota State Medical Association, are coming in fast to headquarters at 11 W. Summit Avenue, Saint Paul.

Each member of the association has already received one copy without charge and all are at liberty to secure as many more as they can use for a charge of ten cents a copy. Cash should accompany each order.

Orders from other states are conspicuous in the mail.

This booklet is designed by the committee for the assistance of the doctor in issuing instructions to his diabetic patients.

Proposed Health Insurance Legislation

Are We Ready for It?

The first Health Insurance bill of the year is now ready for 1935 legislatures.

This bill is the work of the American Association for Social Security. Note its distinguished list of officers: Miss Jane Addams, Bishop Francis J. McConnell, Mr. Alfred I. DuPont, Mr. Glenn Frank, Mr. John A. Lapp, Mr. I. M. Rubinow, Mr. Herbert S. Bigelow.

It might look as though this noted group of laymen had stolen a march on the President's Committee on Social Security, which is also studying the problem of delivery of medical service to lower income groups. It is well to note, however, that the same Edwin Witte who is secretary to the President's Committee assisted in drawing up this bill.

The President's Committee may or may not recommend a system of health insurance for inclusion in legislation for the national Congress this year.

The Association for Social Security is ready to submit its bill to Congress and to every state legislature in the country now. That the bill will get a serious hearing in some quarters seems inevitable in view of the temper of the times. Whether it will actually become law in any quarter depends very much upon the interest and activity of the medical profession.

The medical profession had no representation of doctors, who ever practiced medicine for a living, in the deliberations of the Association.

Following is a résumé of the bill, together with comments on it by Dr. H. M. Johnson of Dawson, chairman of the Committee on Public Policy and Legislation of the Minnesota State Medical Association. *Read them!*

Study This Bill

Every medical man in the state should know what these representative non-medical humanitarians want to do about the practice of medicine in America.

Every medical men in the state should know, also, what such practical medical men of affairs as Dr. Johnson think about the plan, and make up their minds accordingly.

Legislators are sure to be well informed about what the noted and well financed lay backers of the proposed legislation think about the matter. Their one-sided propaganda is unlimited.

It rests with the doctors—*with you*—to acquaint these same legislators and congressmen with the medical point of view. *Study this bill.*

The Proposed Bill

The bill was drawn up by Professor H. A. Gray of the New York University Law School. Only two doctors, Dr. Haven Emerson and Dr. Alice Hamilton, neither one of whom represents the viewpoint of the practicing physician, served on the advisory committee. Mr. Edwin E. Witte, executive secretary of the President's Committee

on Economic Security, helped at the job. So did Mr. Abraham Epstein of New York, who is executive secretary of the association.

Briefly:

1. The bill is designed for all employed persons and their dependents except "those employed at other than manual labor who are receiving in excess of *$250 monthly*" and their families and dependents. (Exceptions are made for farm laborers and for employees in the personal or domestic service of an employer having less than three employees engaged in such service.)

2. For all of these, with the above exceptions, Health Insurance is *compulsory* as provided in this bill.

3. The plan is to be financed by a fund to be placed in the custody of the State Treasurer. This fund will be made up of

a. Three per cent of the employee's wage to be deducted by the employer
b. One and one-half per cent of the payroll to be paid by the employer
c. One and one-half per cent of the payroll to be paid by the State

4. The fund thus built up is to provide

a. *Cash benefits* for disability
b. *Maternity benefits*
c. *Medical benefits* (mentioned last in the bill)

5. Medical benefits will include

a. The services of a general medical practitioner and, at his own prescription—
   1. General and special hospital treatment
   2. Nursing care
   3. The services of a surgeon or other specialist, et cetera.
   4. Services of laboratories and clinics
   5. Services of a dental practitioner for specified limited treatments

6. Physicians, hospitals, et cetera, are to be selected by the patient from a list of those willing to serve under the terms laid down by this political group that would then control our profession.

7. Physicians are to be paid in accordance with arrangements made by each Local Council (see accompanying diagram of set-up).

8. The general state set-up includes State, District and Local offices (see diagram), with employers, employees, the public, doctors and dentists represented in each.

9. Special arrangements are provided in the bill for persons having up to $5,000 a year, not covered in the proposed act, to come under its benefits on a voluntary basis.

10. Authority is reserved to the Commission to erect hospital and other facilities in districts where adequate facilities are lacking.

Administrative Costs

The diagram is a schematic representation of proposed organization for administering Health Insurance under this bill.

The table below gives a very moderate estimate of the administrative cost of the plan. It is far below what the minimum salary cost would probably be. Salary estimates are *not* provided in the bill. These figures represent our own, very conservative guess as to the minimum expense of this one item in the cost of health insurance to the state and its beneficiaries.

These estimates do not cover the cost of medical, hospital, nursing and dental care nor the various benefits provided for in the bill.

It is interesting to note that the set-up as proposed would doubtless cost more than twice as much for salaries alone as was spent from July, 1933, to August, 1934, a period of fourteen

Governor

Health Insurance Commission

Medical Advisory Committee	Central Appeal Board	State Advisory Council

District Offices (Estimated Minimum of Ten for Minnesota)

District Office XXXXX	District Office XXXXX	District Office XXXXX	District Office XXXX	District Office XXXXX	District Office XXXX	District Office XXXXXXX

Each district office to include the following: Finance Supervisor, Medical Supervisor, Stenographers and Clerks, District Appeal Board.

Local offices (indicated by X's—probably at least 90 of them in Minnesota) each to include the following: Finance Supervisor, Medical Supervisor, Stenographers and Clerks, and Local Council to include also representative of medical and dental professions, representative of employers, representative of employees, representative of public health officer.

months, for the entire medical and dental care, and for drugs, by the State Emergency Relief Administration.

OUR ESTIMATE OF THE MINIMUM ADMINISTRATIVE COSTS OF STATE HEALTH INSURANCE AS INDICATED IN THIS BILL

Fulltime state officials		
5 Administrators @	$2,400	$12,000
5 Secretaries @	1,200	6,000
25 Clerks @	900	22,500
Fulltime District officials		
10 District Medical Supervisors @	1,500	15,000
10 District Medical Supervisors @	1,800	18,000
20 District Clerks @	900	18,000
Fulltime Local Officials		
90 Local Finance Supervisors @	1,200	108,000
90 Local Medical Supervisors @	1,500	135,000
180 Local Clerks @	900	162,000
		$496,500

Note: The above does not include rent, postage, office supplies, mileage, et cetera., nor per diem salaries to members of appeal boards, et cetera.

This Model Bill

By H. M. JOHNSON, M.D.

This proposed Model Health Insurance Bill is a set-up evidently written by people who have only one point of view. The plan is apparently machine-controlled all the way down. Appointments doubtless would be political. The medical men have scarcely anything to say. Once in a while, perhaps, a doctor would be put on as an advisory member of some committee.

What these socialistically-minded people are trying to do is beyond all comprehension. In order even to begin to understand it, you must read the whole bill and study it. Study it in such a way that you can inform your legislators and congressmen about it. You might also try to get them to read parts of it for themselves after you have checked it through. If enough men want it, copies will be sent out soon, with an analysis of it.

Elect Sensible Men

We know the trend of the times. We know that something of this nature may happen. But there are two sides to this question. Every medical man should be familiar with the various methods of practicing medicine in countries throughout the entire world. We should ally ourselves and be ready to fight for what is best. There is no better way of starting such a campaign than by seeing that only good and sensible men are elected to both the state legislatures and to congress. With such men representing the public, we do not need to fear any health legislation of this vicious type. I have not yet seen a health insurance plan of which I approved. We should assume leadership in any plan agreed upon by organized medicine.

Like SERA

Remember that this set-up is very much like the one proposed by the SERA in Minnesota. And further remember that, due to this last plan, the practice of medicine has been set back 30 years because, for one thing, hospitalization of the poor has been prohibited. This is just one illustration of many to show how progress is retarded in the practice of medicine by this set-up. Who will suffer? The poor . . . and the doctor, too, since his ideals for practicing better and better medicine are thus interfered with.

Many of those who are advancing this bill are not trained. After all, a professional man is not made overnight; years of hard study are required to fit him for his career. Anyone who has sufficient capital can become a grocer in a few hours, but it is not so with a doctor or dentist. The functions of the professional man cannot safely be assumed by laymen. For example, judging whether or not a patient needs a doctor's care is a function belonging solely to a physician. A social worker is entitled only to look into the patient's financial condition and determine whether or not he deserves to be on relief. Any further action on his or her part is attempting to practice medicine without a license.

There never was a time when professional organization was more urgently needed. If we want to protect ourselves, we must be prepared to fight. For years past, I have predicted that we might look for something of this kind to come. Gentlemen, it is now on our doorstep. What are we going to do about it?

Interested in Health

There are close to 100 state and national organizations concerned to some extent with the health of the people of the United States.

Some of these are official and some non-official, as you will note by the list below. All profess a direct interest in the type, quality and distribution of medical care in the United States.

Only a few of them are physicians' organizations and many are wholly lay organized with

no professional knowledge whatever of the problems of medical care.

This list was compiled by Dr. E. C. Hartley, of Saint Paul, and it has been used with great effect by Dr. F. J. Savage, of Saint Paul, whose term as president of the Minnesota State Medical Association expires next month, in talks on state association work before affiliated county medical societies.

The list:

OFFICIAL NATIONAL ORGANIZATIONS

1. White House Conference of Child Health and Protection
2. U. S. Dept. of Agriculture
3. U. S. Dept. of the Interior—Office of Education
4. U. S. Dept. of the Interior—Office of Indian Affairs
5. U. S. Dept. of Labor—Children's Bureau
6. U. S. Public Health Service

The Foundations

1. The Rockefeller Foundation
2. The Milbank Memorial Fund
3. The Commonwealth Fund
4. The Duke Endowment
5. The Couzens Fund
6. The Rosenwald Fund

Other Organizations

1. State Health Departments
2. City Health Departments
3. County Health Departments
4. Insurance Companies
5. Industrial Organizations
6. School Health Services

NON-OFFICIAL NATIONAL ORGANIZATIONS

1. American Association for Labor Legislation
2. American Association of Medical Milk Commissioners, Inc.
3. American Association of School Physicians
4. American Chemical Society
5. American Child Health Association
6. American Epidemiological Society
7. American Heart Association
8. American Hospital Association
9. American Institute of Park Executives & American Park Society
10. American Medical Association
11. American Public Health Association
12. American Red Cross
13. American Soc. for Control of Cancer
14. American Social Hygiene Association
15. Conference of Embalmers Exam. Boards of U. S.
16. Conference of State & Provincial Health Authorities of North America
17. National Boards of Medical Examiners of U. S.
18. National Committee for Mental Hygiene
19. National Comm. for Prevention of Blindness
20. National Child Welfare Association
21. National Conference of Nomenclature of Disease
22. National Conference of Social Work
23. National Dairy Council
24. National Funeral Directors Association
25. National Health Council
26. National Hospital Day Committee
27. National Organization for Public Health Nursing
28. National Safety Council
29. National Society of Penal Information, Inc.
30. National Tuberculosis Association
31. The Committee on the Costs of Medical Care

STATE-WIDE ORGANIZATIONS WITH HEALTH WORK INCLUDED IN THEIR PROGRAMS

Official Organizations

1. State Department of Health	Local Boards of Health
2. State Board of Control	
a. Children's Bureau	Child Welfare Boards
b. Bureau of Research	Child Welfare Boards
c. Division of the Blind	Child Welfare Boards
d. Division of Tuberculosis	Child Welfare Boards
3. State Department of Education	
a. Division of Physical and Health Education	Local School Boards
b. Division of Re-education and Placement of Disabled Persons	
4. University College of Agriculture, Forestry and Home Economics	Farm Bureau
5. Minnesota State Sanitary Conference	Local Health Officers
6. Bureau of Indian Affairs (U. S.)	Indian Agencies
7. State Livestock Sanitary Board	
8. State Department of Agriculture, Dairy and Food	
9. State Board of Examiners in Basic Sciences	
10. State Board of Medical Examiners	

Voluntary Organizations

1. State Medical Association	District and County Association
2. Women's Auxiliary State Medical Association	District and County Association
3. State Dental Association	District and County Association
4. Women's Auxiliary State Dental Association	District and County Association
5. Minnesota Public Health Association	County Public Health Association
6. American Red Cross	County Chapters American
7. Junior Red Cross	Local Chapters Red Cross
8. Minnesota Association for Crippled Children, Local Chairman	Through Kiwanis, Rotary Clubs
9. Federated Women's Clubs, Welfare Division	District, County and Local Clubs
10. Minnesota Education Association	District Divisions
11. Parent Teachers Association	District and Local Association
12. American Legion and Auxiliaries	District and Local Posts
13. Shriners	
14. State Organization for Public Health Nursing	

Seen By The Secretary

Being the Log of the Month of a Medical Executive

Monday, October 22—Lunched with Benjamin E. Youngdahl, Director of Human Relief for the State Emergency Relief Administration, to talk over problems of medical relief.

A new fee schedule is now in process of formulation. It has been placed by the Executive Committee of the Council in the hands of the Committee on Public Policy and Legislation.

Tuesday, October 23—President-elect W. A. Coventry came down to St. Paul headquarters from Duluth this morning. His 1935 committee list is now tentatively completed, but his work as president of the Association has scarcely begun. His speaking engagements alone will keep him busy next year.

Friday and Saturday, October 26 and 27—At Deerwood Sanatorium, Deerwood, for a Tuberculosis Institute. Dr. E. G. Hubin was host and thirty doctors attended. This was a very successful institute and an excellent example of the postgraduate work carried on jointly by the Minnesota State Medical Association and the Minnesota Public Health Association. Dr. J. A. Myers of the University of Minnesota and Dr. S. E. Slater of the Southwestern Sanatorium at Worthington conducted the institute.

1935 Meeting

Tuesday, October 30—To Philadelphia for the Interstate Postgraduate Medical Association meeting.

It is the plan of the Council to make our Twin City medical meetings greater than ever. And this is the year to do it. When will we have the chance again in Minnesota to bring such men as Dr. Harvey B. Stone of Johns Hopkins, Dr. A. A. Cushing of Boston, Dr. George H. Whipple of Rochester, N. Y., and Dr. Earl B. McKinley, Dean of George Washington University, to Minnesota all in one year? Dr. Whipple is the 1934 Nobel Prize winner for his work on anemia.

These men and others are likely to be available to us because of the American Association for the Advancement of Science meeting which convenes the same week at the University.

Saw Dr. Ward of the A. A. A. S. on the trip. Here are his proposals for the meeting: That Tuesday morning's session should be a joint session of his association with the medical association; that Monday and Tuesday nights be devoted to joint sessions of the associations. The scientific association holds its own sessions only in the morning and all its people will be free to attend the medical association meeting with reciprocal admittance buttons in the afternoon.

Dr. John Fulton of Yale, and Dr. Max Cutler of Chicago are on the tentative schedule for the meeting, also, and the prospect is brighter than ever before for a brilliant Minnesota meeting.

Negotiations for housing the meeting are still under way. They have run into difficulties on the score of costs, a matter which will doubtless be ironed out satisfactorily within a few days.

One other item of advance news on the meeting should be of interest to every one of us in Minnesota. We are practically assured of the exhibit showing the experiments by Dr. L. G. Rowntree of Philadelphia and his associates with the thymus and pineal extracts of Dr. Adolph Hanson of Faribault. This exhibit was a center of interest at the interstate meeting. The report of the experiments printed in the *Journal of the American Medical Association* recently received newspaper comment all over the country.

Tuesday, November 13—Went to Faribault in the afternoon to speak to a joint session of the Council of Parent-Teacher Associations and the Women's Auxiliary of the Rice County Medical Society.

Here is an excellent example for women's auxiliaries elsewhere to follow. Relations between doctors' wives and such groups as parent-teacher associations should be very close. Auxiliary members can often do more than medical advisers to guide the health policies of these groups.

Friday, November 16—Conferred with Dr. W. A. Dvorak and Dr. Irwin A. Epstein of the Oral Hygiene Committee of the Minnesota State Dental Association. These dentists are keenly interested in the joint problems of professional organizations. They are considering the inauguration of services like those that have been carried on so successfully by the medical association, particularly our news and radio services. Dentists and doctors should be of mutual assistance to each other. They have much in common. Dinner in the evening, with twenty-five roentgenologists and other medical men interested in problems connected with the use of x-ray in public health work. This is a new development, comparatively speaking, in public health work and requires careful handling by all concerned.

Saturday, November 17—Dinner with the 1935 Committee on Scientific Assembly, first meeting. Only tentative plans can be made now for the 82nd annual meeting. When the meeting halls are finally determined upon, the committee will be ready to work.

Monday, November 19—Met first with the Executive Committee of the Hennepin County Medical Society, and then spent several hours going over possibilities for holding the meeting at the Minneapolis Auditorium. The cost still looks prohibitive.

Tuesday, November 20—Conferred with Dr. A. S. Hamilton of Minneapolis, on the prospects of the Historical Committee, and spent more hours investigating other possible meeting places in Minneapolis. Adequate space and facilities for the scientific demonstrations which are becoming such a feature of our meetings greatly limits our choice of halls.

Working Together

Thursday, November 22—In Rochester with Dr. Esmond R. Long of the Phipps Institute, Philadelphia. Dr. Long came to Minnesota to speak at the annual dinner of the Minnesota Public Health Association at the Nicollet Hotel, Friday night, November 23. Dr. Long talked at a lay Christmas Seal meeting under the joint auspices of the Rochester Rotary and Kiwanis

Clubs, Wednesday noon, with Dr. C. A. Mayo presiding. At night he talked to a Councilor District medical meeting called by Dr. H. Z. Giffin, Rochester, Councilor. Medical men from all over the surrounding district gathered for this meeting.

Friday, November 23—This was the annual meeting day for the Minnesota Public Health Association with a Christmas Seal Institute occupying the morning and noon luncheon and the annual directors meeting in the afternoon at the headquarters, 11 W. Summit Ave., Saint Paul. Dr. C. H. Mayo, president of the organization, presided at this meeting and at the banquet that followed at the Nicollet Hotel. The close association of the medical and public health associations is never more evident than on these occasions. Directors of the health association figure largely on the council and on the committee of the Minnesota State Medical Association. Thus policies and principles of these naturally allied organizations are coördinated and guided. It is to be noted that this happy situation is not duplicated to the same degree in any other state in the country.

Minnesota State Board of Medical Examiners

Park Rapids Chiropractor Found Not Guilty of Manslaughter

State of Minnesota versus H. E. Jenks

On Tuesday, November 20, 1934, a jury in the District Court of Hubbard County, presided over by Judge Alfred L. Thwing of Grand Rapids, brought in a verdict of not guilty in the case of State of Minnesota versus H. E. Jenks. Jenks was on trial following his indictment by a grand jury of Hubbard County of the crime of manslaughter in the first degree. The indictment followed the death on March 16, 1934, at Park Rapids, of a seventeen year old farm girl, whose death followed the commission of a criminal abortion.

The State introduced the testimony of two boys who testified that they took the deceased to the home of the defendant on or about February 24, 1934, at Park Rapids, for the purpose of having an abortion performed upon her. One of the boys testified that he paid the defendant twenty-five dollars to have the abortion performed. A physician who was called shortly before the girl's death, and who had her removed to a hospital at Park Rapids, testified as to the cause of death and to a dying declaration of the deceased that the defendant had performed the abortion upon her.

The defendant, who is a licensed chiropractor, admitted that the deceased had come to his home at about the time mentioned, and that the two boys had also been there, but denied that he was paid any money to perform an abortion and denied also that he performed one. He testified that the only treatment he gave the deceased was a chiropractic adjustment.

The case was tried for the State by Mr. Charles L. Clark, County Attorney of Hubbard County, and the defendant was represented by Mr. Daniel DeLury of Walker, Minnesota, and Mr. Knight B. Wilson of Park Rapids, Minnesota. There was a delay of seven months in the trial of the case due to the disappearance immediately after the death of the girl of one of the State's main witnesses, who later was apprehended in California and brought back to Minnesota for the trial.

Maple Lake Woman Warned Against Misrepresentation

Mrs. Ella Graham, forty years of age, Maple Lake, Minnesota, has been warned by the Minnesota State Board of Medical Examiners to refrain from representing herself to the public as a dermatologist or skin specialist. Mrs. Graham has been traveling about the state taking orders for cosmetics, and an investigation was conducted following her stop at Anoka, Minnesota, where it is claimed she represented herself as a dermatologist and a skin specialist. Mrs. Graham admitted representing the product as having the approval of The Mayo Clinic, which, of course, is an unwarranted statement. Mrs. Graham claimed that the manufacturers of the product had stated to her that the cosmetics were approved by The Mayo Clinic. This was denied by the people who manufacture these articles. Mrs. Graham was advised that any further complaints along this line would result in the matter being taken to court. Mrs. Graham has never been employed by The Mayo Clinic and has no connection whatsoever with the Clinic, and has no right under the Basic Science Law to represent herself as a dermatologist or skin specialist.

The President's Letter

The Bundle of Sticks

Nowhere is the value of the ancient proverb of the bundle of sticks better illustrated than in organized medicine today. I have stated on many occasions that it is my belief that there is more loyalty to our organization, and a better spirit of coöperation with the State Medical Association than ever before, and that the need for such loyalty and coöperation was never greater.

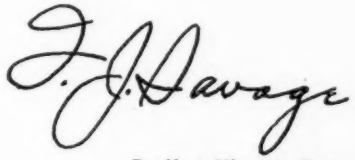
The great foundations, in their majority report, tried to force on the American public a system of the practice of medicine which would have revolutionized and disrupted methods and standards gradually evolved during the past years. The medical profession visualized their economic security jeopardized, and a system of dictation of methods of practice in which they would be taking orders from a powerful lay group of politicians. We need not comment on the result.

With every session of the legislature, we are faced with demands of hitherto unlicensed cults demanding official legal status, and the recognized cults demanding additional prerogatives. Many medical men believe that during the 1935 session of the legislature, we shall have some form of state medicine proposed for legislative action. Frequently, some apparently harmless looking bill is found, on study, to vitally affect the practice of medicine. Legislative watchfulness this year takes on an added importance in view of our vital interest in what the President's sub-committee on "Provisions for Meeting the Economic Risks of Illness" may propose. This legislative work is not a one-man job—remember the bundle of sticks.

The State Board of Medical Examiners has a record of some eighty-five court convictions since 1927. They have not called upon our association for the $3,000.00 which was promised them if they had to have it to continue their work of law enforcement. However, if this law enforcement program is to continue, they must have additional resources. One or two dollars' increase in the annual registration fee would provide the necessary funds, and force Minnesota physicians, who are not members of our association, to help share this expense.

A few years ago, we were greatly concerned with the medical care of the veteran. This year the matter has had but little attention. The chief economic matter with which we have been concerned, has been State and Federal medical care. Your council, as a whole, and its subcommittee, which is authorized to act for them in negotiations with the State and Federal relief administrations, has spent a great deal of time in conference. We have heard, on several occasions, a veiled threat of full time state paid physicians if we cannot arrive at agreement with the State and Federal representatives. You may rest assured that whatever agreements are reached, this group of men have used every effort toward fair play for all parties concerned.

The year has been crowded full of interest and work. The universal coöperation of the officers of our association, committees, and county societies, has made this work a pleasure. Again I wish to thank the members of the Minnesota State Medical Association for the high honor of conferring on me the presidency of this association, and to express my appreciation and thanks for the universal coöperation which I have received.



President, Minnesota State Medical Association.

OF GENERAL INTEREST

Dr. R. A. Curtis, formerly of St. Peter, has moved to Le Center, Minnesota.

Dr. Edward C. Maeder, Minneapolis, and Miss Irene S. Kangas, Saint Paul, were united in marriage in Minneapolis, July 24, 1934.

Dr. E. V. Strand was elected coroner of Washington County at last election. Dr. Strand carried the largest vote of any candidate in the county.

At the Duluth meeting of the Minnesota Society of Internal Medicine, Dr. E. L. Gardner, Minneapolis, was elected president, Dr. Frank J. Hirschboeck, Duluth, vice president, and Dr. C. B. Drake, Saint Paul, secretary-treasurer.

Dr. H. O. McPheeters addressed a joint meeting of County Medical Societies at Estherville, Iowa, on November 15, 1934. He gave a discussion on varicose veins, which was followed by a presentation of cases with demonstration of technic.

Dr. Donald C. Balfour, Rochester, was elected president of the American College of Surgeons at the Clinical Congress held in Boston. Dr. Arthur W. Allen, Boston, was elected first vice president and Dr. John A. Gunn, Winnipeg, second vice president.

Dr. and Mrs. William J. Mayo celebrated their fiftieth wedding anniversary on November twentieth. A reception was tendered Dr. and Mrs. Mayo by members of The Mayo Clinic staff at the Clinic Library, and a family dinner at the Mayo home further celebrated the occasion.

Dr. Paul W. Giessler of Minneapolis gave a lecture on "Weak Feet, Classification and Outline of Office Treatment in Foot Conditions" before the physicians of the Renville County Medical Society at Olivia in October. Following the lecture guests were entertained at the home of Dr. and Mrs. A. A. Passer.

Dr. W. A. O'Brien, Associate Professor of Pathology, University of Minnesota, spoke to the Lakeview Hospital Memorial Staff, November 20, 1934. Dr. O'Brien outlined the duties of the hospital staff, and made many very valuable suggestions, which the staff will endeavor to follow. Dr. O'Brien later made the principal address at the nurses graduation, from the Lakeview Memorial Hospital.

The St. Louis County Medical Society recently instructed its secretary to send a roster of the society to several of the "Piratical Free Medical Journals" which pander to advertisers shunned by the Council on Pharmacy and Chemistry of the American Medical Association, asking that the names listed be removed from the mailing list. If this request goes unheeded these journals will be allowed to accumulate at the post office with the penalty of return postage accruing to the pamphleteers.

SPLINT 'EM WHERE THEY LIGHT

Through the efforts of the Minneapolis Regional Fracture Committee and the Minneapolis Surgical Society, coöperating with the Committee on the Treatment of Fractures of the American College of Surgeons, the nine private ambulances of the two private ambulance companies in Minneapolis are now equipped with the approved splints for transportation of fractures of the upper and lower extremities.

The Thomas-Murray hinged splint for transportation of upper extremity fractures and the Keller-Blake hinged half-ring splint for transportation of fractures of the leg and thigh bones are carried on all private ambulances and will be applied by the ambulance attendants under the direction of the attending physician, if present.

The splints will be left on the patient until they are removed by the attending physician at the hospital after the x-ray study has been made. The hospitals will carry an extra supply of these approved and standardized splints for exchanging with the private ambulances as the splinted patients are brought in.

The private ambulance companies are arranging to demonstrate this method of splinting fractures and these splints at all hospital staff meetings so that all members may see just how they are equipped to "splint 'em where they light."

OBITUARY

G. O. Fortney

1880-1934

Dr. G. O. Fortney, well known physician of Zumbrota, passed away at his home, October 25, 1934, following an illness of several months.

Dr. Fortney was born on a farm near Viroqua, Wisconsin, in 1880. He was a graduate of the Viroqua high school and then attended the University of Wisconsin at Madison. After graduating he took a medical course at Rush Medical College, Chicago, where he received his M.D. degree. Later he took postgraduate work at the University of Chicago, the Tulane University, New Orleans, Louisiana, and a special course in eye, ear, nose and throat at Chicago. He interned at the Cook county hospital, Chicago, and also at the La Crosse Lutheran hospital.

After practising in Wisconsin he came to Zumbrota in 1908 and has had a splendid and growing practice since that time.

He was a member of the American Medical Association, state and county organizations. He was also a member of the Masonic order, as well as the K. of P. and Woodman lodges.

He was married in 1902 to Miss Celia Proctor, who survives him, as does also a brother, Clarence D. Fortney, of La Crosse, Wisconsin.

Harry Alfred Halgren

1870-1934

Dr. Harry Alfred Halgren was born in Minneapolis April 30, 1870. His family settled permanently at Watertown in 1877 and it was in the public schools there that he received his early education. Graduating from the School of Pharmacy at the University in 1890, he practiced his profession for three years in Pipestone and Watertown before entering the University of Minnesota Medical School.

Returning to Watertown Dr. Halgren became one of the pioneer physicians of that section of the State and practiced his profession for thirty-five years. In 1905 he founded the Cottage Hospital, the first of its kind to be built in the county. Serving one term as Coroner of Carver County, he was called upon to officiate at a hanging of a murderer at Carver. The gruesome duty of standing at the foot of the gallows waiting for the trap to spring and later pronouncing the criminal dead was an unforgettable experience and caused him to decline the nomination for a second term.

On May 18, 1904, Dr. Halgren was married to Elsie C. Belden, who with two daughters, Ardis Lucile and Neva Harriet, survive him. Afflicted with coronary heart disease the last four years of his life, his death on September 15, 1934, was due to coronary thrombosis. Besides his immediate family Dr. Halgren is survived by a sister, Mrs. Lottie E. Shrader of Huntington Park, California, and two brothers, Dr. Guy E. Halgren of Minneapolis and Arthur C. Halgren of Watertown.

Dr. Halgren was a member of the Scott-Carver County Medical Society, the State and American Medical Associations. He had been a Mason for many years and the Masonic Quartet of Minneapolis took part in the final ceremonies rendered to one of Watertown's leading citizens. Out of respect, the public school and places of business were closed during the services.

John Trickey Shelland

1872-1933*

Dr. John T. Shelland was born at Morris, New York, June 20, 1872, the son of a Methodist minister, the Reverend J. C. Shelland. The doctor spent his youth in South Dakota, Hutchinson, Montevideo and Minneapolis. He studied medicine at Hamline University and Rush Medical College and began practice at Forman, North Dakota, later moving to Hankinson. Since 1905 he had practiced at Ada, Minnesota, and in that year married Etta G. Carpenter, who in addition to one son, John David, and two daughters, Mrs. Robert Kienetz and Hildred, all residing in Ada, survives him. His father and stepmother live in Minneapolis, the former having reached the age of ninety.

Dr. Shelland took an active part in civic, fraternal and social affairs in his community. Having served several terms as city alderman, in 1921 he was elected mayor of Ada, a position he held six consecutive terms. He was also a member of the city board of health for a number of years and served as chairman of the county public health association. In addition to being a member of the Masonic Order and the Modern Woodmen of America, he was one of the organizers a few years ago of the Ada Rotary Club and served a term as president.

Ada has lost one of its leading citizens and the profession a valuable member.

Ernest Lightfoot Strader

1876-1934

Dr. Ernest L. Strader passed away at his home at White Bear Lake, Minnesota, November 6, 1934, at the age of fifty-eight.

Dr. Strader practiced several years in Harrodsburg, Kentucky, before coming to Minnesota in 1920, when he took charge of a tuberculosis sanatorium first at Cannon Falls and later at Deer River. He retired on account of poor health in 1931 and moved to White Bear Lake at that time.

Dr. Strader is survived by his widow, Mrs. Blanche L. Strader of White Bear Lake, a brother, F. Vaughn Strader and a sister, Mrs. Lee Bassett, both of Harrodsburg, Kentucky.

*Our attention has just been called to the omission in our pages of any record of the death of Dr. John T. Shelland of Ada, Minnesota, which occurred a year ago, November 27, 1933.

REPORTS AND ANNOUNCEMENTS OF SOCIETIES

Medical Broadcast for December

The Minnesota State Medical Association
Morning Health Service

The Minnesota State Medical Association broadcasts weekly at 10:30 o'clock every Tuesday morning over Station WCCO, Minneapolis and Saint Paul (810 kilocycles or 370.2 meters).

Speaker: William A. O'Brien, M.D., Associate Professor of Pathology and Preventive Medicine, Medical School, University of Minnesota.

The program for the month of December will be as follows:

December 4—Shortness of Breath.

December 11—Gasoline and Kerosene Poisoning in Children.

December 18—Mental Hygiene.

December 25—(Christmas).

A. M. A. Exhibit

Application blanks are now available for space in the Scientific Exhibit at the Atlantic City Session of the American Medical Association, June 10 to 14, 1935. The Committee on Scientific Exhibit requires that all applicants fill out the regular application form and requests that this be done as early as convenient. Applications close February 25, 1935.

Persons desiring application blanks should address a request to the Director, Scientific Exhibit, American Medical Association, 535 North Dearborn Street, Chicago, Illinois.

Van Meter Prize

The American Association for the Study of Goiter again offers the Van Meter Prize Award of $300 and two honorable mentions for the best essays on the subject of goiter provided they meet the standards of the award committee. The essays should be based on original research work on the subject of goiter, preferably its basic cause. The prize essay or its abridgment is to be presented at the annual meeting of the Association to be held in Salt Lake City, Utah, in June, 1935.

Competing manuscripts should be in the hands of the Corresponding Secretary, W. Blair Mosser, M.D., Kane, Pa., not later than April 1, 1935.

The first prize of $300 for the 1934 meeting was awarded to M. A. B. Brazier, Ph.D., B.Sc., London, England, for her essay, "The Impedance Angle Test for Thyrotoxicosis."

First honorable mention was awarded Prof. Ugo Cerletti, Genoa, Italy, for his essay, "Three Years of Experimental Research in the Etiology of Endemic Goiter."

Second honorable mention was awarded D. Roy McCullagh, M.D., Cleveland Clinic, Cleveland, Ohio, for his essay, "Studies in Blood Iodine Using a New Chemical Method."

Lyon-Lincoln County

At a meeting of the members of the medical societies within a radius of seventy miles held at Tracy, Sunday, November 11, the speakers were: Frank J. Savage, "Your State Association"; and Mr. George Larson, field representative, "The Several Commissions, SERA and FERA" and "The Duties of the Contact and Advisory Committees." Mr. F. Manly Brist discussed the various questions referred to him by the council, the draft of the insurance bill, also liability of doctors accepting cases under the FERA. Doctor Ridder of Flandreau, South Dakota, felt that some of the questions to be discussed were of more than local importance and honored us with his presence.

H. M. Workman, *Secretary.*

Minneapolis Surgical Society

The Minneapolis Surgical Society will hold its Annual Symposium on Fractures at 7:45 P. M. Tuesday, December 11, 1934, in the Auditorium of the Hennepin County Medical Society.

The following members and guests will take part in the program:

1. Dr. Harvey Nelson—Fracture Disability Estimation.
2. Dr. E. A. Regnier—Fracture of Neck of the Femur.
3. Dr. R. C. Webb—Fracture of Upper End of the Tibia Involving the Knee Joint.
4. Dr. George R. Dunn—Fracture of the Os Calcis.
5. Dr. R. G. Allison (by invitation)—Pathological Fractures.
6. Dr. Willard White—Results in Fracture of the Spine.
7. Dr. A. A. Zierold—Newer Methods of Determining Extent of Traumatic Brain Injury.
8. Dr. George D. Eitel—Fracture Dislocation of the Shoulder.

The medical profession is cordially invited to attend.

F. A. Olson, *Secretary.*

Olmsted-Houston-Fillmore-Dodge County

The annual meeting of the Olmsted-Houston-Fillmore-Dodge County Medical Society was held November 7. Officers elected were: Dr. A. M. Snell, Rochester, president; Dr. W. B. Grinnell, Preston, vice president; Dr. M. C. Piper, Rochester, secretary-treasurer. The following delegates and their alternates were elected:

Delegates—

Dr. W. F. Braasch, Rochester
Dr. L. W. Pollock, Rochester
Dr. J. E. Crewe, Rochester
Dr. R. D. Mussey, Rochester

Dr. F. D. Smith, Kasson
Dr. R. V. Williams, Rushford
Dr. J. W. Helland, Spring Grove
Dr. M. C. Piper, Rochester
Alternates—
Dr. A. H. Sanford, Rochester
Dr. P. A. O'Leary, Rochester
Dr. George Joyce, Rochester
Dr. W. W. Walters, Rochester
Dr. D. E. Affeldt, Kasson
Dr. C. M. Tierney, Harmony
Dr. J. A. Malerich, Caledonia
Dr. H. K. Gray, Rochester

The meeting was preceded by a dinner at the Congregational Church, with 140 members and guests present. Mr. Larson, of the State Secretary's office, gave a very interesting half-hour résumé of the SERA projects.

M. C. PIPER, *Secretary.*

Red River Valley

The Red River Valley Medical Society held its fall meeting at Thief River Falls, Tuesday evening, October 30. A banquet was held in the Civic and Commerce Rooms for the members, Ladies Auxiliary, and guests.

The program consisted of the following addresses:

1. The Comparative Value of Tuberculin Tests and Childhood Tuberculosis—DR. W. G. PARADIS, Crookston.

2. Urography with Special Reference to Diagnosis—DR. EDWARD BRATRUD, Thief River Falls.

3. Tumors of the Adrenal: Report of a Case—DR. V. L. EVANS, Thief River Falls.

At the business meeting which followed, Dr. M. O. Oppegaard, a member of the State Legislative Committee, discussed the candidates for election. Dr. C. L. Oppegaard discussed the importance of the County Medical Society committees, and urged early formation of such committees to coöperate with the county relief administrators.

C. L. OPPEGAARD, *Secretary.*

Renville County

The Renville County Medical Society held its annual meeting at Bird Island, November 6, 1934. The following officers were elected: President, Dr. R. S. Madland, Fairfax; vice president, Dr. A. A. Passer, Olivia; secretary-treasurer, Dr. J. Dordal, Sacred Heart; delegate, Dr. R. C. Adams, Bird Island; alternate, Dr. W. A. Brand, Redwood Falls; Member of Board of Censors, Dr. E. C. Gaines, Buffalo Lake.

Mr. George Larson gave a very comprehensive talk on "Federal Relief and Compensation."

Dr. J. S. Holbrook, Mankato, reported on several interesting cases of perforated duodenal ulcers.

Dr. Max Hoffman, Saint Paul, lectured on "The Present Status of Our Knowledge of Pneumonia.

J. DORDAL, M.D., *Secretary.*

Rice County

A meeting of the Rice County Medical Society was held Tuesday, November 27, 1934, at St. Olaf College, Northfield, where dinner was served to members and their wives at 6:30 P. M. in Mohn Hall.

Dr. Roy E. Swanson, Minneapolis, instructor in obstetrics and gynecology at the University of Minnesota, gave an interesting message on "Leukorrhea."

The women were invited to attend a college recital through the courtesy of Dr. O. P. Thorsen.

C. J. PLONSKE, *Secretary.*

Southwestern Minnesota

The annual meeting of the Southwestern Minnesota Medical Society was held November 5, 1934, at the Masonic Hall in Fulda.

The following officers were elected: Dr. W. H. Halloran, Jackson, president; Dr. C. R. Stanley, Worthington, vice president; Dr. H. DeBoer, Edgerton, secretary-treasurer.

The following censors were elected to serve for three years: Dr. A. H. Brown, Pipestone County; Dr. C. O. Wright, Rock County; Dr. J. H. Dudley, Cottonwood County.

Drs. Evelyn Gruhlke McLane and Wm. O. McLane of Jackson and Dr. Peter J. Pankratz of Mountain Lake were elected to membership in the society.

Dr. Thomas Lowe, Pipestone, was the guest of the evening and a very fine tribute by the Drs. Brown, McCrea, Sogge and Dolan was given, to which Dr. Lowe made a short response.

Dr. Harry Christianson of Minneapolis spoke on the subject "Some Everyday Problems in Proctology," and Dr. Haynes Fowler, also of Minneapolis, addressed the meeting on "Appendicitis."

E. G. MCKEOWN, *Secretary.*

Washington County

The regular monthly meeting of the Washington County Medical Society was held November 13, 1934, at 6:30 p. m., at the Stillwater Club.

Dr. O. J. Campbell of the Department of Surgery of the University of Minnesota talked on the newer ideas of treatment of acute appendicitis, and also on tumors of the breast.

Mr. P. H. Hamilton, Minneapolis, representing the Mead Johnson Company, showed two reels of films entitled "The Physiology of Fertilization in the Human Female."

Dinner was served and Dr. G. F. Brooks, president of the society, presided.

Wright County

The annual meeting of the Wright County Medical Society was held at Buffalo, October 9, 1934.

Officers elected for 1935 were: President, Wm. E. Hart, Monticello; vice president, Verner Johnson, Delano; secretary-treasurer, John J. Catlin, Buffalo. Dr. C. L. Roholt, Waverly, was elected delegate to the state meeting with Dr. O. Grundset, Montrose, as alternate. Dr. A. E. Phillips, Delano, was elected censor for a period of three years.

Dr. J. M. Hayes, Minneapolis, Councillor for the Sixth District, attended the meeting and gave a talk on "Methods of Handling Medical Relief, and Workings of the ERA and SERA." Dr. Harry Christianson, Minneapolis, gave a very interesting talk on "Diagnosis and Treatment of Certain Phases of Proctology."

The Ladies' Auxiliary met with Mrs. J. J. Catlin and at 6 o'clock a dinner was served to the combined organizations.

A Committee on Constitution and By-laws was appointed to study the copies furnished by the State Secretary and to present them for adoption at the next meeting.

Dr. Theodore J. Catlin, who recently completed an interneship at the Cincinnati General Hospital and is located at Buffalo, was elected to membership.

JOHN J. CATLIN, *Secretary.*

New Councilor Districts

Several changes were made in the councilor districts of the Minnesota State Medical Association at the Duluth meeting of the Council in July.

According to the new division Goodhue and Rice counties were added to District No. 1. Waseca county, formerly in District No. 1, was transferred to District No. 4. The district now includes the county societies of Freeborn, Goodhue, Mower, Olmsted-Houston-Fillmore-Dodge, Rice, Steele, Wabasha and Winona.

District No. 2 is to remain as it was. It includes Cottonwood, Faribault, Jackson, Martin, Murray, Nobles, Pipestone, Rock and Watonwan counties, comprising the Blue Earth Valley, the Southwestern Minnesota and the Watonwan Medical Societies.

Three counties were added to District No. 3, Kandiyohi, Meeker and Traverse, which also includes Big Stone, Brown, Chippewa, Lac Qui Parle, Lincoln, Lyon, Pope, Redwood, Stevens, Swift and Yellow Medicine. The medical societies of the district are the Camp Release District, the Kandiyohi-Swift-Meeker, the Lyon-Lincoln, the Redwood-Brown and West Central Medical Societies.

With the addition of Waseca, District No. 4 now includes Waseca, Blue Earth, Carver, Le Sueur, McLeod, Nicollet, Renville, Scott, Sibley. The societies are the Blue Earth, Nicollet-Le Sueur, the McLeod, Renville, Scott-Carver and Waseca County Medical Societies.

Mille Lacs, Pine and Sherburne counties were added to District No. 5 and Goodhue and Rice were transferred to District No. 1. The counties of this district now are Anoka, Chisago, Dakota, Isanti, Kanabec, Mille Lacs, Pine, Ramsey, Sherburne and Washington. The societies of this district are the East Central Minnesota Medical Society, the Ramsey and Washington County Medical Societies.

District No. 6 now includes only Hennepin and Wright counties, both of which have county medical societies. The following counties were transferred from this district—Kandiyohi and Meeker to District No. 3; Sherburne to District No. 5 and Stearns to District No. 7.

Aitkin and Stearns and Koochiching (if the county so votes) have been or will be added to District No. 7. The district includes Aitkin, Beltrami, Benton, Cass, Clearwater, Crow Wing, Hubbard, Morrison, Koochiching (?), Stearns, Todd and Wadena, comprising the Stearns-Benton and the Upper Mississippi Medical Societies.

Douglas county was transferred from District No. 7 to District No. 8, which now includes Becker, Clay, Douglas, Grant, Kittson, Lake of the Woods, Mahnomen, Marshall, Norman, Otter Tail, Pennington, Polk, Red Lake, Roseau and Wilkin counties. The societies are the Clay-Becker, the Red River Valley and the Park Region Medical Societies.

The final disposition as to councilor districts of Koochiching county will wait for a vote of Koochiching county members.

EFEMIST (HART) AND EFEDRON (HART)

In Queries and Minor Notes in The Journal, Feb. 8, 1930, page 430, the formula for Efedron was stated as: Ephedrine hydrochloride Gr. 1; Chlorbutanol Gr. 2¼; Sodium chloride Gr. 2¼; Menthol Gr. 3; Phenol Gr. 2; Oil of cinnamon Gr. 0.08; Jelly base q. s. ad drachms 5. Efemist, according to the advertising of the manufacturer, contains 1 per cent ephedrine hydrochloride and ¼ per cent chlorbutanol, in addition to undeclared amounts of menthol, eucalyptol, phenol and sodium chloride in a "special water and tissue fluid soluble base." Of course, neither Efedron nor Efemist has been accepted by the Council on Pharmacy and Chemistry, nor has the manufacturer requested Council consideration of the products. Under date of March 2, 1934, a circular letter to the profession from the Hart Drug Corporation stated that "editorially 'The Journal of the American Medical Association,' Vol. 101, No. 19, directs attention to the fact that an oily base in ephedrine-containing preparations is deleterious to the cilia of the nasal mucosa" and "Also, in Vol. 102, No. 1, of the same publication, while harmlessness of the long continued use of ephedrine nose drops is shown, attention to the dangers of oil-containing solutions are pointed out." The sources referred to appear among Queries and Minor Notes; they were not editorials. It is obvious that the intention of each article was to point out that oily solutions of ephedrine when used properly are not injurious to the nasal mucous membrane. No comparison was made of water with oily solutions and it was certainly furthest from all intent in either Query and Minor Note even to suggest that the unacceptable proprietary mixtures, Efedron and Efemist, are to be commended or that they are superior to oily solutions of ephedrine. (*Jour. A. M. A.*, May 19, 1934, p. 1701.)

PROCEEDINGS *of the* MINNESOTA ACADEMY OF MEDICINE

Meeting of October 10, 1934

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Town and Country Club on Wednesday, October 10, 1934. The President, Dr. Archa Wilcox, in the Chair. The meeting was called to order at 8 p. m.

There were sixty-seven members and three visitors present.

Minutes of the May meeting were read and approved.

The scientific program followed.

GASTRITIS, A PHENOMENON OF PYLORIC OBSTRUCTION, AND ITS RELATION TO DUODENAL ULCER

WALTMAN WALTERS, M.D.
and
GERALD T. CHURCH, M.D.
Rochester

Dr. Walters, candidate for Associate Membership, read his Inaugural Thesis on the above subject. Lantern slides were shown. (To be published in MINNESOTA MEDICINE.)

Summary

In microscopic examination of specimens removed from stomachs resected during the course of operations for duodenal ulcer, associated gastritis was found in but few instances. In studies made of obstructing gastric lesions, it appeared that gastritis occurred in association with pyloric obstruction in a high percentage of cases and was absent when pyloric obstruction was not present. To confirm this clinical impression, a group of cases in which there were obstructing carcinomas of the stomach was studied, and microscopic evidence of gastritis was found in 92 per cent of the cases. A study was made of a control group of patients who had carcinoma without obstruction, who were of similar age and distribution by sex, and whose symptoms were of similar duration. Gastritis was absent in 82 per cent of cases. Studies are in progress at the present time, to determine whether gastritis can be caused experimentally, by producing various degrees of pyloric obstruction with fascial bands.

Discussion

DR. F. C. RODDA (Minneapolis): I would like to ask Dr. Walters what we might anticipate in a case of congenital pyloric stenosis? Is there any evidence that we might have an associated gastritis in these cases?

DR. J. A. JOHNSON (Minneapolis): Dr. Walters certainly should be complimented on his presentation. Some very interesting observations have been brought out. I have been somewhat hesitant in doing the extensive resections advocated by some surgeons, both here and abroad. Dr. Walters has clearly demonstrated that gastritis is confined almost entirely to cases that are obstructed. If that is true, then we should accomplish about the same result with drainage and neutralization of a gastroenterostomy as they do with wide resections. There are undoubtedly many things that should be taken into consideration as causative factors in the production of gastritis. There is a great difference between Americans and Europeans in the mode of living, the type of food and drink, and the customs of eating. If one observes the mouths in most Europeans they are almost universally filthy compared to mouths of Americans. If infection from the mouth is constantly draining into an obstructed stomach it is not strange that many should develop gastritis. For many years in this country there has been constant propaganda for clean mouths. This in itself may have served to limit the number of cases of gastritis.

DR. IRVINE MCQUARRIE (University of Minnesota): This may be a little aside, but I recall as a youngster hearing of a man with some chronic stomach disorder who had on several occasions had his breath get on fire. This summer my attention was called to a paper in the London Lancet, reporting a genuine case of this type and citing others in the literature. Apparently what happens in such cases is that methane and hydrogen gases, which have been generated in the partially obstructed viscus, are ignited when they are eructated at the same time that a lighted match is being applied to a cigar or pipe held in the patient's mouth. I have wondered how common that experience is and if Dr. Walters has encountered any such cases.

DR. A. A. ZIEROLD (Minneapolis): I have been much interested in hearing Dr. Walters' paper this evening, particularly in hearing his report of the material in European clinics. While at Schmieden's Clinic I had an opportunity of going over a good deal of his material and, although the evidence of gastritis appeared to be definite in the gross, I was much less impressed with the microscopic sections. I think most people who have seen Finsterer's material have been impressed more by the extensity of the operation than by the intensity of the gastritis present. It has been interesting to hear Dr. Walters' reconciliation of the situation by his observation of the development of gastritis following pyloric obstruction. While we have much less material, I, too, have been struck by the frequent occurrence of gastritis in the Surgical Clinic at the Minneapolis General Hospital, and particularly in obstructing carcinoma. We have identified gastritis by the use of the gastroscope and also at operation. Another thing we have noticed is that very definite and demonstrable gastritis often occurs in those who have come for secondary gastric resection.

DR. GEORGE FAHR (University of Minnesota): Dr. Zierold has taken some of the words out of my mouth; namely that part of his discussion in which he mentioned the gastritis one sees following gastroenterostomy. We see this in patients coming back to the hospital, who have had a duodenal ulcer and a competently performed gastroenterostomy; they come back with dis-

tress symptoms, and when one looks through the gastroscope one sees two of the different types of gastritis that have been described by the gastroscopists, and, after putting these patients on what amounts to a Sippy regime, the condition clears up in some cases; not all cases, however. I think there is no question that there often is an abnormal appearance in the gastric mucosa following gastroenterostomy.

Dr. A. C. Strachauer (Minneapolis): In regard to the incidence of ulcer, it is my opinion that the percentage of occurrence is decreasing. In my own practice, I certainly see fewer cases of surgical ulcer and fewer cases of the complications of ulcer; that is, perforation and hemorrhage. Is this decrease due, perhaps, to better oral and dental hygiene? Has the widespread removal of the tonsil had an effect?

My surgical work is carried on in three hospitals so that I have opportunity to see the surgical cases posted for operation, and it is certainly quite the exception to see cases of ulcer posted for operation in our Minneapolis hospitals. The present economic condition is, I am sure, not entirely responsible for the change. In a period of twenty-five years of observation there has been a definite decrease and nearly complete disappearance of certain surgical lesions that were common in the early years of my practice; *i.e.*, tuberculous glands of the neck, tuberculous salpingitis, and tuberculous peritonitis have practically disappeared. Also, the incidence of goiter has greatly decreased.

Dr. Russell Morse (Minneapolis) (by invitation): From the discussion this evening, the question of gastritis seems to be a question of several problems: (1) what constitutes normal histology of the stomach; (2) the question of habitat; (3) the question of oral hygiene.

I believe that the question of histology is the more important. What constitutes normal gastric mucosa? In 1928 Faber and Lange set up a fairly strict standard of what should be considered the normal histology of the gastric mucosa. They described the tubular gastric glands as normally being closely packed together and separated from each other and from the muscularis mucosa by a minimal amount of interstitial tissue consisting of small blood and lymphatic vessels, a small amount of fine connective tissue, and very few wandering cells. The surface epithelium is of the mucous type of columnar cell and this epithelium also lines the fovea. The interfovealar sepaces are filled with a very fine reticular tissue with very few wandering cells. From our studies of surgical material, we are in agreement with these findings of Faber and Lange. If this standard is accepted as normal, then the evidence of inflammation of the gastric mucosa is a very common finding. The inflammatory changes which we have observed in the gastric mucosa are congestion, edema, and infiltration of the interstitial tissues by various types of leukocytes and wandering cells, and the formation of lymphoid follicles in the base of the mucosa. In the presence of these inflammatory changes there usually eventually ensues an atrophy and gradual disappearance of the specific glands of the gastric mucosa.

Dr. Walters (in closing): I wish to thank you all for your discussions. I was very anxious to hear your opinions of this problem. Gastritis is a very important condition, and its relationship to duodenal ulcer is worth continued study by all interested in gastroenterology. If various observers are willing to discuss their studies, we are bound to arrive at some conclusions as to the part it plays in cases of duodenal ulcer. (And, while I would like very much to discuss this further, I think perhaps we had better postpone this because I don't want to infringe on Dr. Sweitzer's time.) I do think that gastroscopic studies will advance our knowledge of this lesion.

MULTIPLE AREAS OF CUTANEOUS GANGRENE FOLLOWING SCARLET FEVER

S. E. Sweitzer, M.D.
Minneapolis

Dr. Sweitzer read a paper on the above subject and showed lantern slides of the case.

Discussion

Dr. Carl Laymon (Minneapolis) (by invitation): I think this case serves to emphasize the fact that, although suppurative adenitis is a common complication of scarlet fever, gangrene of the overlying skin is very infrequent. This type of gangrene should be differentiated from ecthyma gangrenosa usually seen following pustular eruptions such as chickenpox and smallpox.

Dr. Paul O'Leary (Rochester): It is interesting to note that gangrenous ulcerations of the type Dr. Sweitzer described are encountered following systemic diseases of streptococcal origin; they occasionally appear following erysipelas or in association with scarlet fever. I have been particularly interested in gangrenous ulcerations of this type because of a group of cases which were reported from my service several years ago, in each of which the skin condition was a complication of ulcerative colitis. Although the pathology was essentially that of an ulcerative gangrene, the course of the disease in these patients was more chronic, lasting over a period of years, in contrast to the ulcerations due to acute streptococcal infection which run a shorter course. Although some of our cases presented the Bargen type of colitis, it was not a constant finding. Cultures from the lesions in this group elicited both staphylococci and steptococci. Stookey and a group of co-workers recently reported a similar type of ulceration following erysipelas in which staphylococci were recovered repeatedly in pure culture. In other words, the studies would indicate that both streptococci and staphylococci may produce gangrenous ulcerations in the skin, and the factor which allows these organisms to produce these unusual cutaneous pictures is probably a change in the patient's defensive mechanism as a result of the systemic disease he has just gone through. Accordingly, it has been our experience in the treatment of these patients that efforts directed toward stimulating the defensive mechanism by some foreign protein therapy have been more successful than measures directed toward the local care of the ulcerations.

DR. JOHN BUTLER (Minneapolis): Hutchinson first described this very rare condition, naming it varicella gangrenosa, as he assumed it was always in sequence to varicella or vaccinia. Crocker, and various others, observed similar gangrenous lesions following other diseases such as scarlatina, variola, malaria, typhoid fever, measles and pneumonia. In multiple gangrene of the skin the lesions are usually numerous. I would like to ask Dr. Sweitzer if he considers the lesions in his case due to embolism, thrombosis, or external inoculation of the skin?

DR. ARCHA WILCOX (Minneapolis): Dr. Sweitzer's paper recalled to my mind four cases of gangrene of the skin complicating typhoid fever which occurred in Philadelphia, during an epidemic in 1900, at a time when I was an intern in the German Hospital. I have photographs of these cases and wish to present them at this time. Just prior to the Russian-Japanese War, the Cramp Shipyard of Philadelphia had under construction two battleships for the Russian Navy. A medical corps and full quota of seamen were sent from Russia to man these two vessels. The medical officers manning the boats were of high intelligence, charming socially, and I was much impressed at that time with their linguistic ability. However, the seamen were selected from various provinces in Russia, and on account of the various dialects they appeared to have difficulty in conversing. In general, they presented a low type of intelligence and, not appreciating the principles of sanitation or the niceties of life, they jumped into the Delaware River for a bath. As a result of this activity about sixty cases of typhoid fever developed in the crew and they were brought to the German Hospital. Among these sixty cases we had these four cases of rather extensive gangrene of the skin complicating the typhoid fever and I thought that the dermatologists would be glad to comment on the etiology and pathology of these lesions. They are, undoubtedly, a rare condition, but to me they are interesting as an historical event in my early career.

The meeting adjourned.

R. T. LAVAKE, M.D.
Secretary.

BOOK REVIEWS

Books Received for Review

GYNECOLOGY. Brooke M. Anspach, M.D., Professor of Gynecology, Jefferson Medical College. Fifth Edition. 832 pages. Illus. Price, cloth, $9.00. Philadelphia: J. B. Lippincott Co., 1934.

NATURE'S WAY. Victor C. Pedersen, A.M., M.D., F.A.C.S. 81 pages. Price, cloth, $1.00. New York: B. P. Putnam's Sons, 1934.

TEXT BOOK OF PATHOLOGY. Second Edition. E. T. Bell, M.D., Professor of Pathology, University of Minnesota. 767 pages. Illus. Price, cloth, $8.50. Philadelphia: Lea & Febiger, 1934.

MINOR SURGERY IN GENERAL PRACTICE. W. Travis Gibb, M.D., Consulting Surgeon, City Hospital and Central and Neurological Hospitals, Etc. 429 pages. Illus. Price, cloth, $5.00. New York: Paul B. Hoeber, 1934.

THIRTY-FIRST ANNUAL REPORT OF THE BUREAU OF SCIENCE. Philippine Islands. William H. Brown, Director of the Bureau of Science. 94 pages. Manila: Bureau of Printing, 1933.

AN ACTIVITY ANALYSIS OF NURSING. Ethel Johns, R.N., Editor The Canadian Nurse, and Blanche Pfefferkorn, A.M., R.N., Director of Studies, National League of Nursing Education. 214 pages. Price, cloth, $2.00. New York: Nursing Information Bureau of the A. N. A., 1934.

NURSING SCHOOLS TODAY AND TOMORROW. Final Report of the Committee on the Grading of Nursing Schools. 268 pages. Price, cloth, $2.00. New York: Nursing Information Bureau of the A. N. A., 1934.

THE PATIENT AND THE WEATHER. Volume III of Mental and Nervous Diseases. William F. Petersen, M.D., College of Medicine, University of Illinois, with assistance of Margaret E. Milliken, S. M. 375 pages. Illus. Ann Arbor, Michigan: Edwards Brothers, Inc., 1934.

APPLIED ANATOMY. Gwilym G. Davis, M.D., Late Professor of Orthopedic Surgery and Associate Professor of Applied Anatomy in the University of Pennsylvania. Ninth Edition. 717 pages. Illus. Price, cloth, $9.00. Philadelphia: J. B. Lippincott Co., 1934.

MATERNAL MORTALITY IN PHILADELPHIA, 1931-1934. Report of Committee on Maternal Welfare, Philadelphia County Medical Society. 143 pages. Price, $1.00. Published by Philadelphia County Medical Society, 1934.

SYNOPSIS OF GENITOURINARY DISEASES. Austin I. Dodson, M.D., F.A.C.S., Professor of Genitourinary Surgery, Medical College of Virginia, etc. 275 pages. Illus. Price, cloth $3.00. St. Louis: C. V. Mosby Co., 1934.

RULES FOR RECOVERY FROM PULMONARY TUBERCULOSIS. Lawrason Brown, M.D., of Saranac Lake, N. Y. Sixth Edition. 275 pages. Price, cloth, $1.75. Philadelphia: Lea & Febiger, 1934.

INSTITUTIONAL CARE OF MENTAL PATIENTS IN THE UNITED STATES. John Maurice Grimes, M.D. Four years a staff member of the Council on Medical Education and Hospitals of the American Medical Association. 138 pages. Price, cloth, $3.00. Chicago: John Maurice Grimes, M.D., 1934.

CATARACT, ITS ETIOLOGY AND TREATMENT. Clyde A. Clapp, M.D., F.A.C.S., Associate Professor of Ophthalmology, Johns Hopkins University, etc. 254 pages. Illus. Price, cloth, $4.00. Philadelphia: Lea & Febiger, 1934.

MEDICINE MARCHES ON. Edward Podolsky, M.D. 344 pages. Price $3.50. New York and London: Harper & Brothers, 1934.

A cheerful optimism is to be applauded in these days of general depression and the pages of this book are full of promise that a therapeutic millennium is just around the corner. Pernicious anemia, diabetes, Addison's disease, infection, sterility, malignant growths are made to appear to have been conquered respectively by

liver, insulin, cortin, bacteriophage, folliculin, and the radio knife, but these agents are all under trial with some encouraging results. In spite of insulin the number of deaths from diabetes is increasing and though eight years' trial shows that liver holds pernicious anemia in check, it will be many years yet before it will be safe to talk about cures.

Dr. Podolsky has contributed articles on medical and other scientific subjects to popular magazines as well as to medical journals, and no doubt has non-medical readers in mind when he writes, but because of those lay readers it is a pity that he has so much to say about sexual matters, to which he devotes Part Eight. The distinction between the vicious and the morbid irregularities and perversions based on sexual desire is difficult enough for the highly trained psychiatrist, and the subject should be dealt with only in strictly medical works.

W. Davis, M.D.

CATARACT, ITS ETIOLOGY AND TREATMENT. Clyde A. Clapp. 254 pp. Price, $4.00. Lea & Febiger, Philadelphia, 1934.

This small volume contains much of the present-day knowledge of the lens. The work is well planned and concisely written. One enjoys reading the text and often wishes the author had not been compelled to condense his material so thoroughly. There are chapters by Ida C. Mann on the development and comparative anatomy of the lens. The author reviews briefly the anatomy, physiology and chemistry of the lens and then discusses at length cataract. After classifying the various types, he discusses their cause. The chapters on operative technic are clear and complete. At the end of each chapter is a bibliography. Near the close of the discussion of many of the subjects the author has inserted a brief account of his personal views. These are so sensible and well reasoned that they add much to the value of this excellent text.

C. W. Rucker, M.D.

THAT HEART OF YOURS. By S. Calvin Smith, M.D., Sc.D. 212 pages. Illus. Philadelphia: J. B. Lippincott Co., 1934. Price $2.00.

This book was written for the layman, probably mostly for the layman with heart disease. The author has made every effort to present a hopeful and optimistic point of view. For this reason the book makes easy reading; however, there are so many gross misstatements through the volume that it is a question whether such a book should be placed in the hands of the uninformed layman. In the early part of the book the author makes a great point of the possibility of developing heart disease due to over-indulgence in strenuous exercise in the early years of life. He also stresses the danger of so-called "athlete's heart." The question of whether or not the so-called "athlete's heart" ever occurs is certainly debatable and to stress the danger of developing heart disease by over-exercise in adolescence seems not to fit in with the facts. One could point out numerous unorthodox and incorrect statements, but only a few of them need be mentioned:

"Rheumatic fever occurring in young adults seems even more prone to affect the heart at that time than in childhood." Anyone who has read the literature on this subject is well aware that the earlier the attack of rheumatism, the more liable is the heart to be affected and that rheumatic fever in an adult person is for the most part a much less dangerous disease.

"The eating of an excess of meat may produce a nephrosis in the kidneys" is another misstatement in this book which speaks for itself.

"Sixty-five per cent of the attacks of angina pectoris that appear in men who are in the forties result from sexual over-indulgence." I didn't *know* that!

"Minor warning signs [of heart disease] such as muscle spasms of a leg which is called intermittent claudication." I was not aware that intermittent claudication had anything to do with heart disease.

"Fainting also may occur in obese persons with impaired hearts or blood vessels when the abdominal aorta is compressed, as in stooping to the floor."

"Incidentally, when this opening between the right auricle and the left auricle does not completely close shortly after birth, there results the phenomena of a blue baby, simply because the blue blood from the right side of the heart passes through the unclosed channel (patent foramen ovale) and mixes with the bright red arterial blood, changing the baby's natural pink hue to a bluish duskiness." The fact is, however, that most cases of patency foramen ovale do not have cyanosis because the pressure in the left auricle is normally greater than the right. Cyanosis occurs usually only as a terminal event.

"Growing pains mean subacute rheumatic fever." This is not true; by far the greater number of children with growing pains do not have rheumatic disease. The discussion of juvenile rheumatism is inadequate and not up to date. The portion on congenital heart disease might better have been omitted.

"A cardiogram is indispensable in any modern heart examination." The cardiogram is of value only in a small percentage of cases of heart disease.

The author has condemned the use of canned vegetables because he feels that such vegetables do not contain the natural vitamins. He stresses the importance of eating only fresh vegetables. Even a superficial knowledge of the recent work done on the method of canning vegetables without destroying the vitamins would have prevented such a misstatement.

A statement to the effect that the majority of "false anginas, as a usual thing, sooner or later will evenuate into true anginas" cannot be agreed with. The above quotations are only a few of the many misstatements that exist throughout the book.

M. J. Shapiro, M.D.

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(Queries and Minor Notes, J.A.M.A., 88:266)

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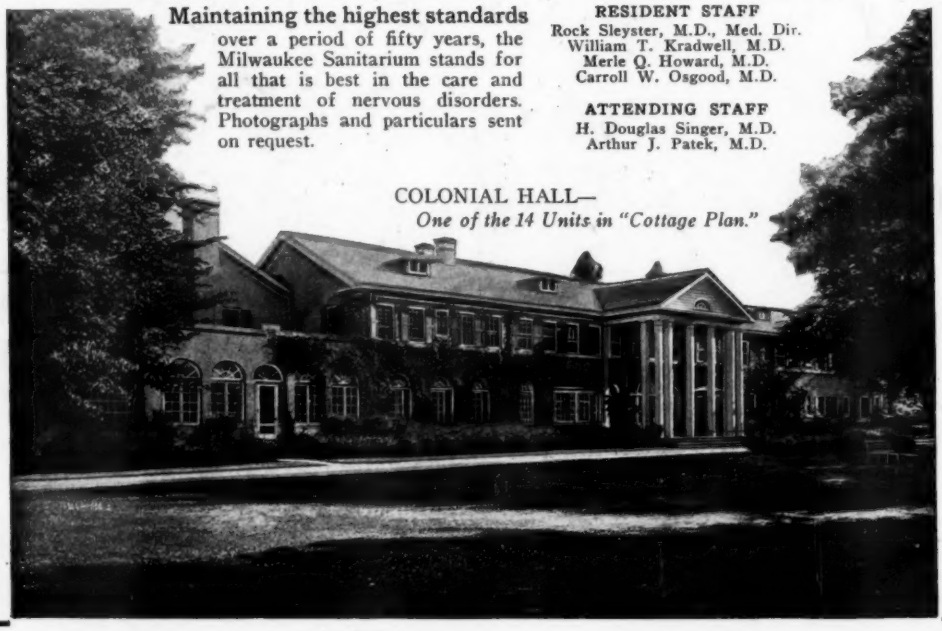

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